



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

THE UNIVERSITY OF TENNESSEE KNOXVILLE MASTER PLAN 2023

JUNE 2023



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MESSAGE FROM THE CHANCELLOR



The sign of a great university is a growing university, in size, impact, and stature. The University of Tennessee, Knoxville is an institution on the rise – growing in metrics across the board. The work in this master plan represents input from across campus about the infrastructure needs to support growing undergraduate and graduate student enrollment, engaged teaching and service, and transdisciplinary research and partnership. As we look to make and teach new discoveries, we are also exploring new ways to work, collaborate and innovate. I am excited about the possibilities for our campus set forth in this master plan, and the way we will make life and lives better for decades to come.

Sincerely,

A handwritten signature in black ink that reads "Donde Plowman". The signature is fluid and cursive, with a long horizontal line extending to the right.

DONDE PLOWMAN



UNIVERSITY OF TENNESSEE

UNIVERSITY OF TENNESSEE

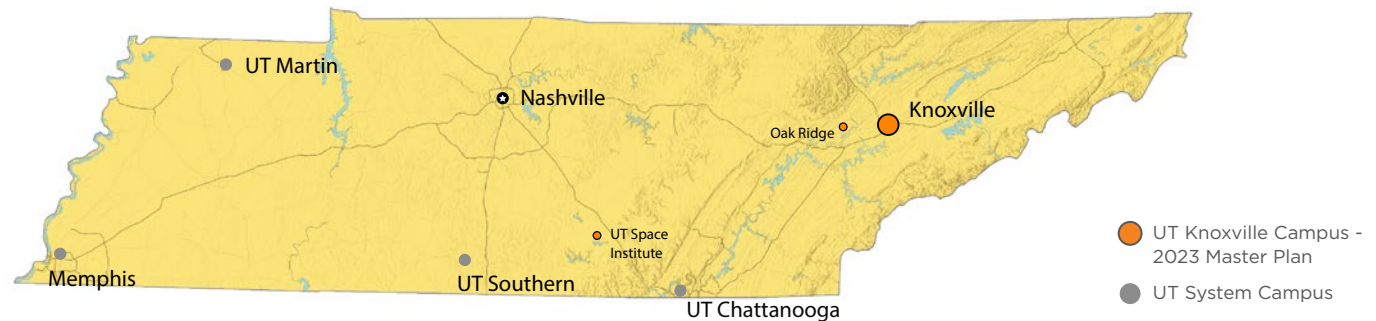


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Executive Summary

WHAT DEFINES THIS MASTER PLAN

Serving all Tennesseans and beyond through education, discovery, and outreach that enables strong economic, social and environmental well-being.



The University of Tennessee, Knoxville Master Plan provides a vision for the dynamic physical transformation of the institution's Knoxville-, Tullahoma-, and Oak Ridge-based campuses. The development of the master plan was informed by the University's three-fold mission and strategic vision. Its goals include providing high quality educational opportunities for learners at all stages; creating a more just and sustainable world

through research, scholarship, and creative work; and supporting local, state, and national communities through the University's land grant mission. Intended to guide investments in the University's built environment for the next decade, the Master Plan includes recommendations that are coordinated with requirements set by the Tennessee Higher Education Commission (THEC), which oversees higher education activities within the state.

Key Planning Drivers

Physical



Improve gateways, edges, access, and first impression



Create a safe and accessible pedestrian-friendly campus



Ensure a sustainable strategy for parking



Create stronger campus connections



Improve connections to the community, downtown, and the river

Programmatic



Facility condition and program alignment



Collaboration, study, and recreation space



Instructional space - labs, maker space, and classroom quality



Additional housing and growth for Greek Life



Campus research growth & Interdisciplinary research space

STRATEGIC VISION GOALS

- Cultivating the Volunteer Experience
- Conducting Research that Makes Life & Lives Better
- Ensuring a Culture Where VOL is a Verb
- Making Ourselves Nimble & Adaptable
- Embodying the Modern R1, Land-Grant University


PLANNING PRINCIPLES

Through a 16-month, five-stage process of engagement with a large cross-section of stakeholders, five distinct planning principles emerged. These principles inform the vision for the physical campus and align with the University's commitment to support its students, faculty, staff, alumni and other stakeholders in the Tennessee community.



Stakeholder engagement included campus community outreach, an online survey, precinct study workshops, and remote focus groups.

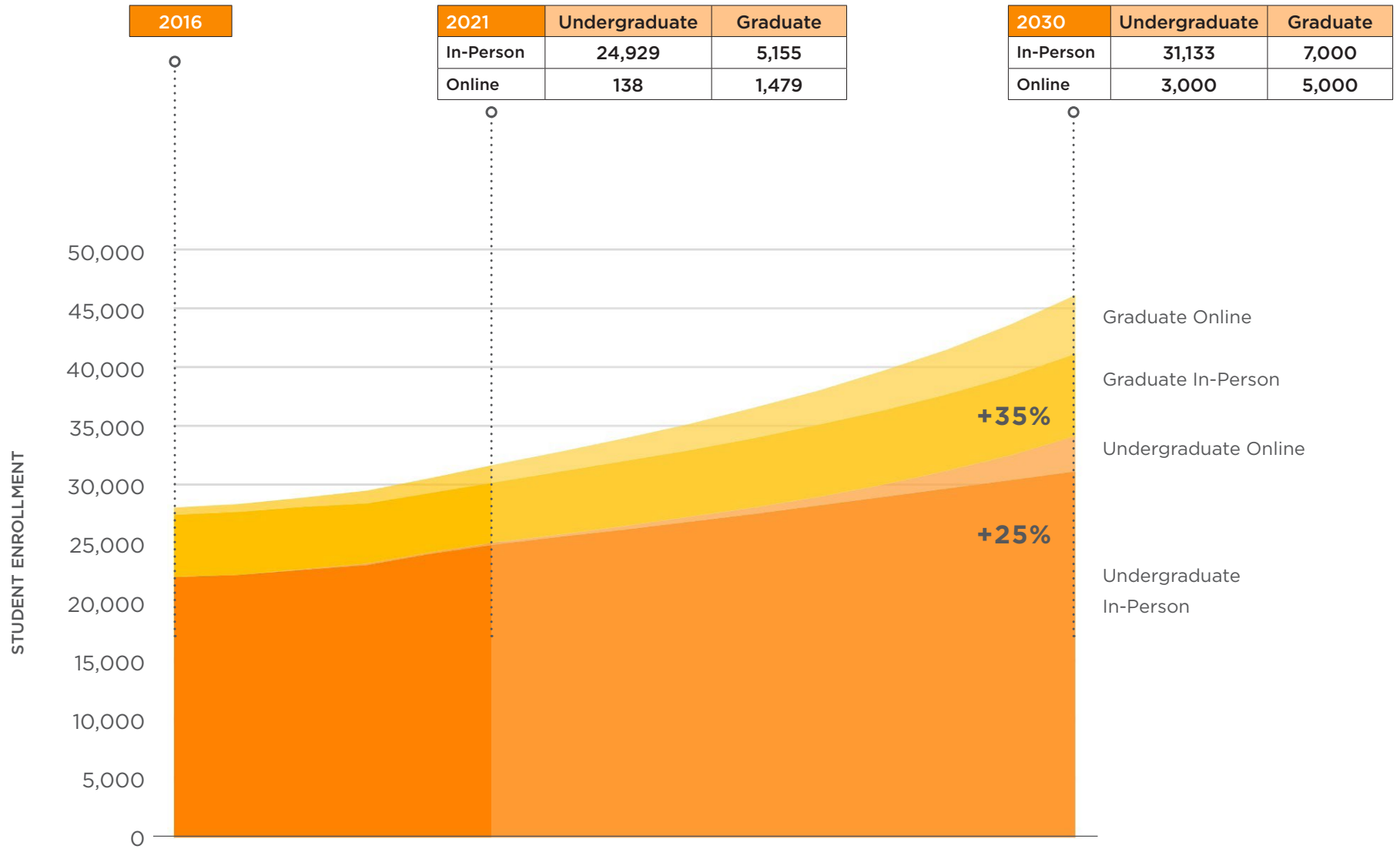




ENROLLMENT PROJECTIONS

The University aims to enroll approximately 46,000 traditional and online students by 2030, an increase of 14,500 students from Fall 2021. Enrollment projections are based on enrollment trends from the past five years at the university, college, and department levels. While growth is anticipated in every college, the majority of growth is forecasted in the Haslam College of Business, the Herbert College of Agriculture, the College of Nursing, and the Tickle College of Engineering.

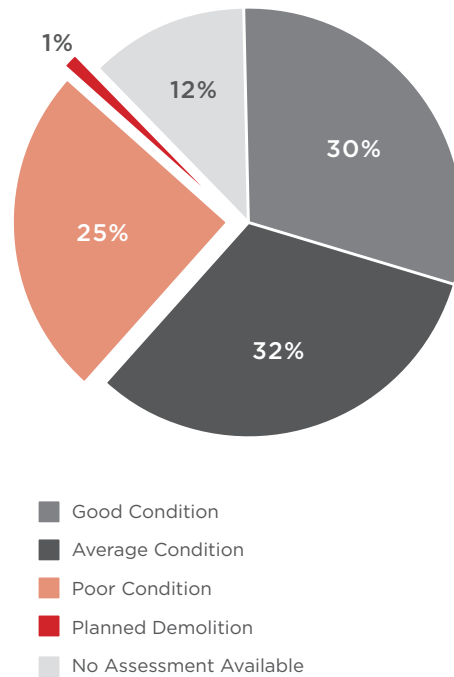
TEN YEAR ENROLLMENT PROJECTIONS



SPACE DRIVERS AND NEEDS ASSESSMENT

RENEWAL

Renewal of campus facilities is a key space driver. Outdated facilities limit programs and negatively impact the student and faculty experience. Currently, 265,000 gross square feet (GSF) are scheduled or identified for demolition related to funded or in-construction projects. Based on Facility Condition Assessments, 4.2M GSF of space, or 25% of space overall is identified as in poor condition. Upgrading and renovating existing space is critical to providing high quality and functional spaces.



The Space Needs Assessment utilizes Fall 2021 institutional data as a baseline to identify existing needs and surpluses. Understanding space needs helps UT Knoxville combine renewal of existing resources with new development to achieve the university's strategic vision. Key areas driving space needs include the expansion of research activity, growth in residential student population, campus-wide need for collaboration, study, and recreation space, and STEM instructional labs and maker spaces.

ACADEMIC, RESEARCH AND SUPPORT SPACE FINDINGS

Relative Balance Percentage Need Percentage Overage

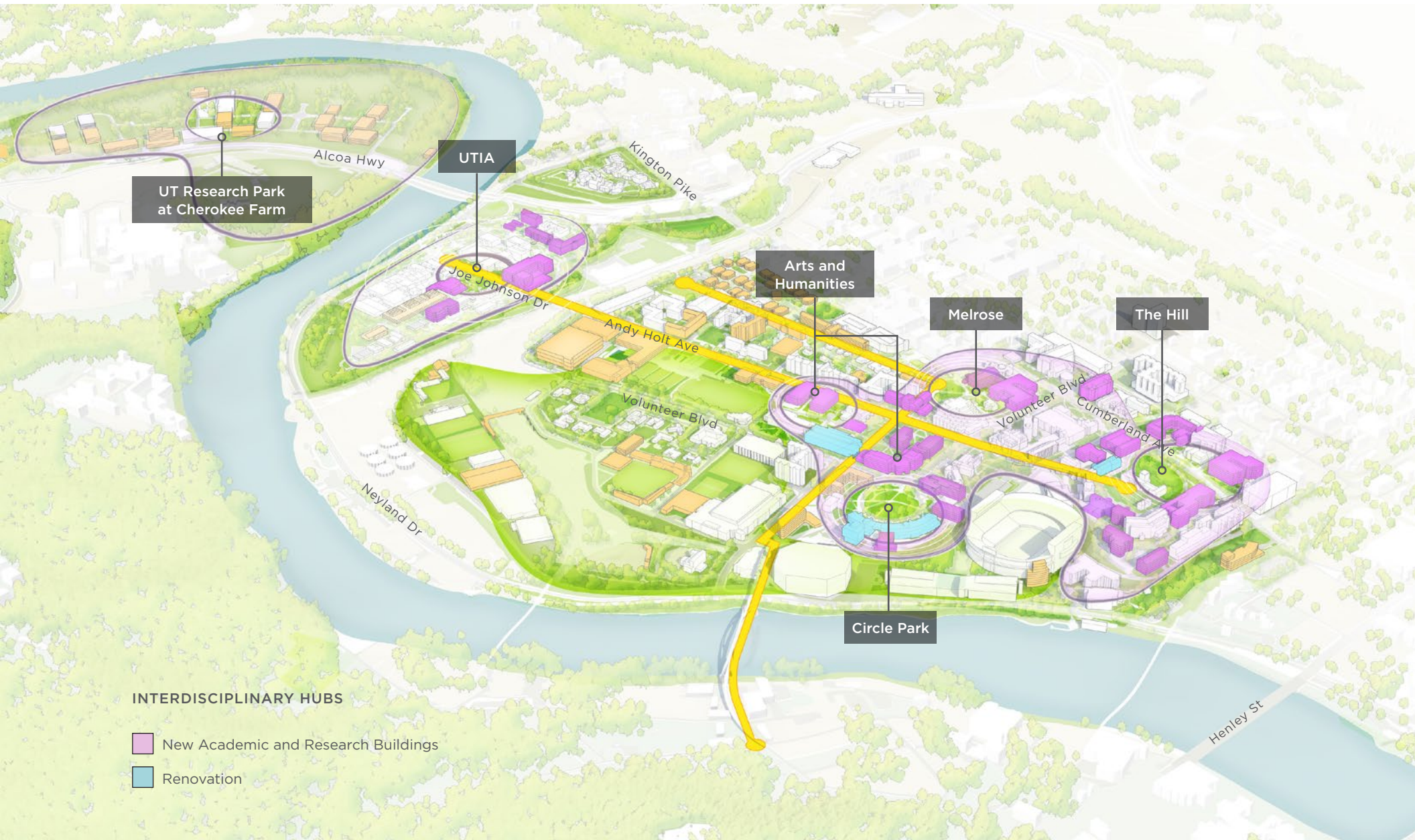
ACADEMIC, RESEARCH, OFFICE SPACE	FALL 2021				FALL 2030			
	EXISTING	MODELED	DIFFERENCE	% CHANGE	EXISTING + PLANNED CONSTRUCTION	MODELED	DIFFERENCE	%
I. CLASSROOMS	360,700	344,100	16,600	5%	427,700	434,700	(7,000)	-2%
II. LAB / STUDIO	289,600	237,600	52,000	18%	336,500	312,900	23,600	7%
III. OPEN LAB	95,500	146,100	(50,600)	-53%	123,200	179,100	(55,900)	-45%
IV. RESEARCH	598,500	646,800	(48,300)	-8%	654,300	980,700	(326,400)	-50%
V. OFFICE	1,434,000	1,062,490	371,500	26%	1,492,100	1,486,160	5,940	0%
VI. LIBRARY	350,700	281,400	69,300	20%	350,400	291,600	58,800	17%
VII. PHYSICAL ED	265,700	322,100	(56,400)	-21%	265,700	394,900	(129,200)	-49%
OTHER CAMPUS SPACE	EXISTING	MODELED	DIFFERENCE	% CHANGE	EXISTING + PLANNED CONSTRUCTION	MODELED	DIFFERENCE	%
Assembly, Exhibit & Event Space	183,500	214,400	(30,900)	-17%	183,600	262,900	(79,300)	-43%
Student-Centered Space	93,000	131,800	(38,800)	-42%	117,300	161,500	(44,200)	-38%
Dining Space	209,000	175,700	33,300	16%	210,200	215,400	(5,200)	-2%
Intercollegiate Athletics	620,700	620,700	0	0%	620,700	820,000	(199,300)	-32%
Student Health Care Facilities	14,800	15,900	(1,100)	-7%	14,800	19,300	(4,500)	-30%
Other Academic Space	135,300	146,400	(11,100)	-8%	137,600	193,200	(55,600)	-40%
Other Administrative Space	314,900	313,700	1,200	0%	314,900	359,000	(44,100)	-14%
Vivaria + Greenhouse	140,100	160,000	(19,900)	-14%	140,100	250,000	(109,900)	-78%
Clinic Space	30,000	30,000	0	0%	30,000	30,000	0	0%
Veterinary Clinic	75,800	75,800	0	0%	75,800	75,800	0	0%
Physical Plant	359,500	384,000	(24,500)	-7%	361,400	390,100	(28,700)	-8%
INSTITUTION TOTAL	5,571,200	5,308,990	262,200	4%	5,856,300	6,857,260	(1,000,960)	-17%

KEY STRATEGIES TO SUPPORT THE VOLUNTEER EXPERIENCE

Interdisciplinary Hubs

The new master plan creates interdisciplinary learning and research communities supported by shared facilities to drive innovation. Existing teaching and research hubs at The Hill, Circle Park, and UTIA (University of Tennessee Institute of Agriculture) are renewed and strengthened with interdisciplinary buildings that replace aging facilities. The master plan envisions a new Melrose hub anchored by a replacement of Melrose Hall containing student success and academic classrooms with adjacencies to the Haslam College of Business expansion, library, alumni, and the International House. The Arts and Humanities hub leverages the existing Temple Hall and parking lot site and the site on Volunteer Boulevard opposite Circle Park for interdisciplinary classroom and humanities buildings with adjacencies to the theater, music, and the arts and architecture. On the UT Research Park at Cherokee Farm, a dynamic innovation hub will allow for new and strengthened university-industry partnerships focused on research and workforce development throughout Tennessee and globally.

Create interdisciplinary learning and research communities supported by shared facilities that catalyze innovation.



UT Research Park at Cherokee Farm

UTIA

Arts and Humanities

Melrose

The Hill

Circle Park

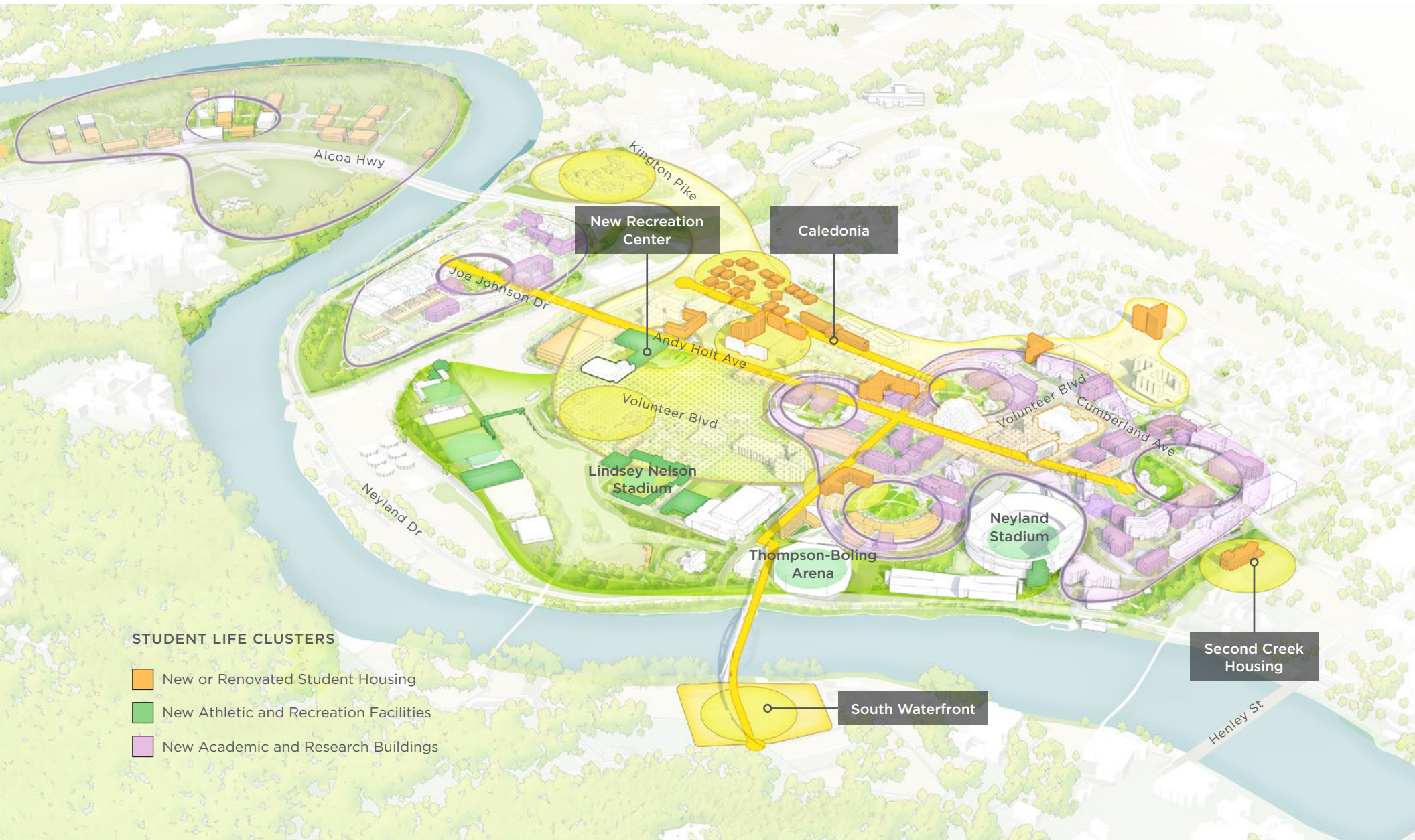
INTERDISCIPLINARY HUBS

- New Academic and Research Buildings
- Renovation

Student Life Clusters

The plan also creates welcoming, vibrant, and mixed-use campus settings supporting student success and wellness. The master plan envisions distributing student life across campus to intersect and interact with interdisciplinary hubs and campus edges. The Terrace and Caledonia neighborhood is envisioned to expand affinity housing adjacent to Sorority Village while establishing a new campus edge proximate to Cumberland Avenue. The South Waterfront mixed-use housing neighborhood and planned pedestrian-bicycle bridge engage with and extend over the river contributing to the City's South Waterfront Redevelopment initiative. The redevelopment of Laurel Residence Hall and Second Creek Housing add additional beds adjacent to the Hill with amenities to support student housing in the eastern areas of campus. Athletics and recreation wrap the south of campus with open space and connectivity improvements, renewal of Lindsey Nelson Stadium, a proposed fieldhouse, and an addition to the Recreation Center.

Create welcoming, vibrant, and mixed-use campus settings supporting student success and wellness.





Joe Johnson Drive - Existing



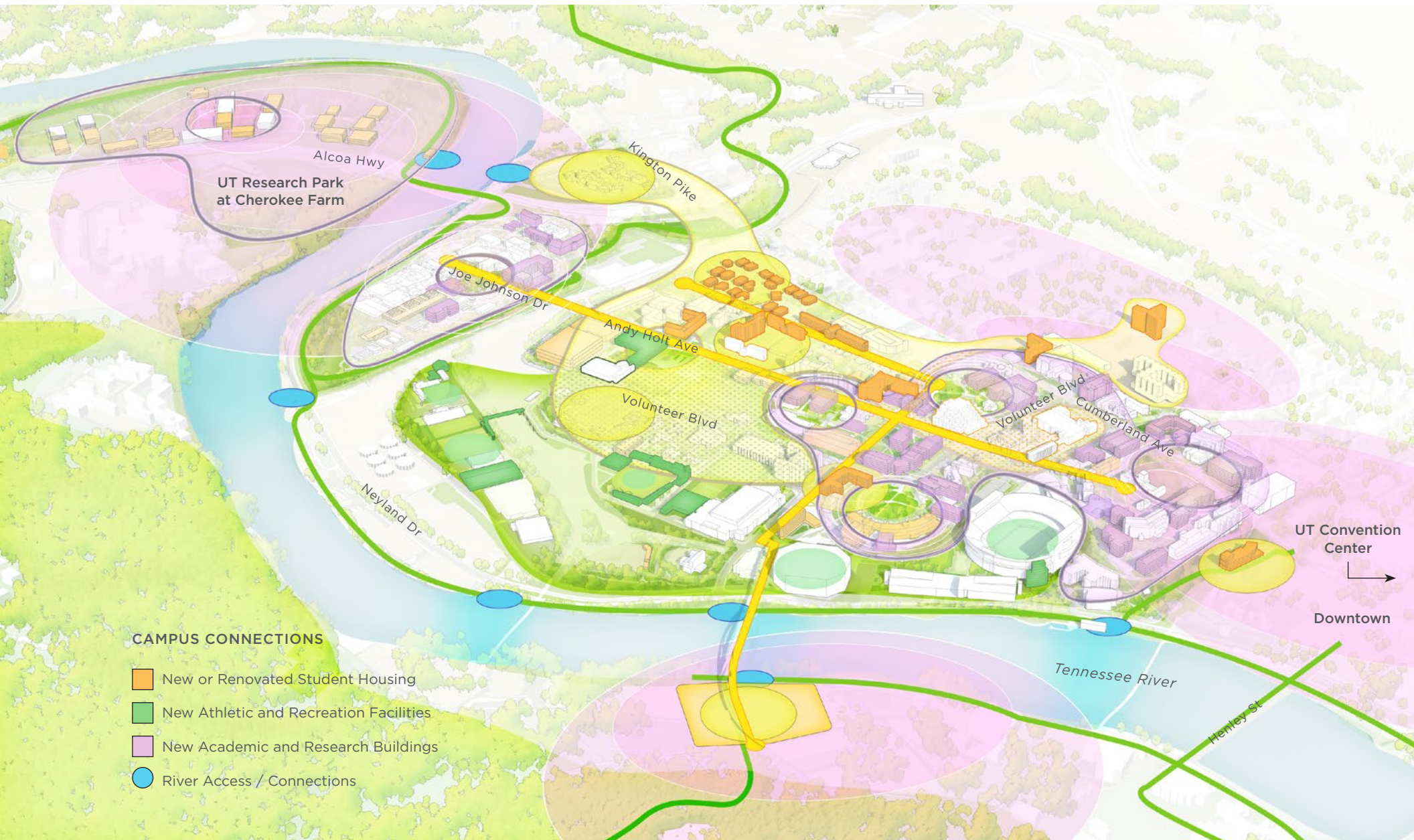
Joe Johnson Drive - Proposed Concept

Campus Connections

A cohesive network of landscapes and gateways strengthens connectivity between campus hubs, the river, and downtown in Knoxville. Streetscape improvements to Joe Johnson bridge and Caledonia Avenue establish consistent east-west corridors connecting UTIA to the Hill. A north-south corridor connects the proposed South Waterfront neighborhood with the Melrose interdisciplinary hub. The master plan enhances both the view of and access to the river and to greenways. The plan will improve campus gateways and connections that leverage the UT Research Park at Cherokee Farm, the UT Convention Center, and Downtown Knoxville as assets for increased partnerships.

Strengthen connectivity between campus hubs, to the river, and downtown Knoxville through a cohesive network of landscapes and gateways.

Leverage the UT Research Park at Cherokee campus as a centerpiece for innovation and increased partnerships throughout greater Knoxville and Tennessee.



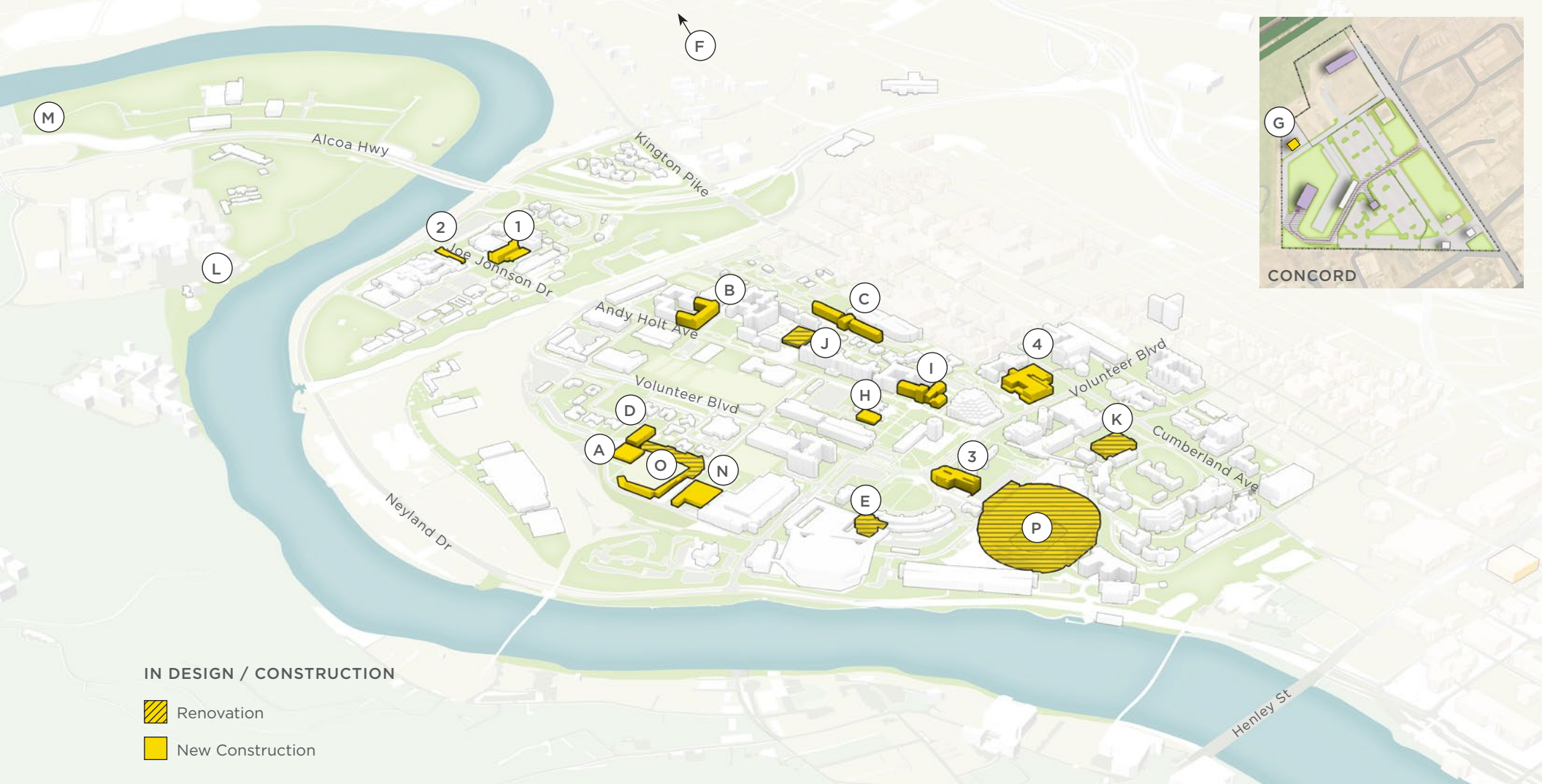
IMPLEMENTATION

The master plan will guide the flexible implementation of a variety of investments in the University's physical plant including targeted demolition, major renovation, and new construction to support the goals outlined in the University's strategic vision.

Projects identified are sequenced in three time frames: near-term for projects anticipated to be completed in five years, mid-term for projects completed within ten years, and long-term projects beyond the time horizon of the plan which have been identified as opportunities reserved for future capacity. The University's capital projects list will be regularly updated to respond to changing conditions and will be funded through a variety of potential sources.

Funded, In Design, or In Construction

Multiple projects are currently underway to address deferred maintenance, space deficits, and to position the university for future strategic opportunities. The Energy and Environmental Science Research building, the Veterinary Medical Center Teaching and Learning Center, and the Croley Nursing Building are major investments in academic and research facilities currently in construction, while the Haslam College of Business Building is in design. Strategic renovations within Walters, Presidential Court, and Andy Holt Tower address academic and administrative deferred maintenance. Residence halls four and five, and housing at Todd Helton Drive are underway to address immediate housing needs. Renovations to Neyland Stadium, and an addition to the Haslam Practice Fields improve the spectator experience and amenities for athletes.



State Funds

- 1. Energy & Environmental Science Research Building
- 2. Veterinary Medical Center - Teaching and Learning Center
- 3. Croley Nursing Building
- 4. Haslam College of Business Building

Potential Public-Private Partnerships

- A. Baseball - Indoor Practice field
- B. Residence Hall #4
- C. Residence Hall #5
- D. Todd Helton Drive Residence Hall

E & G Residual and Donor Funds

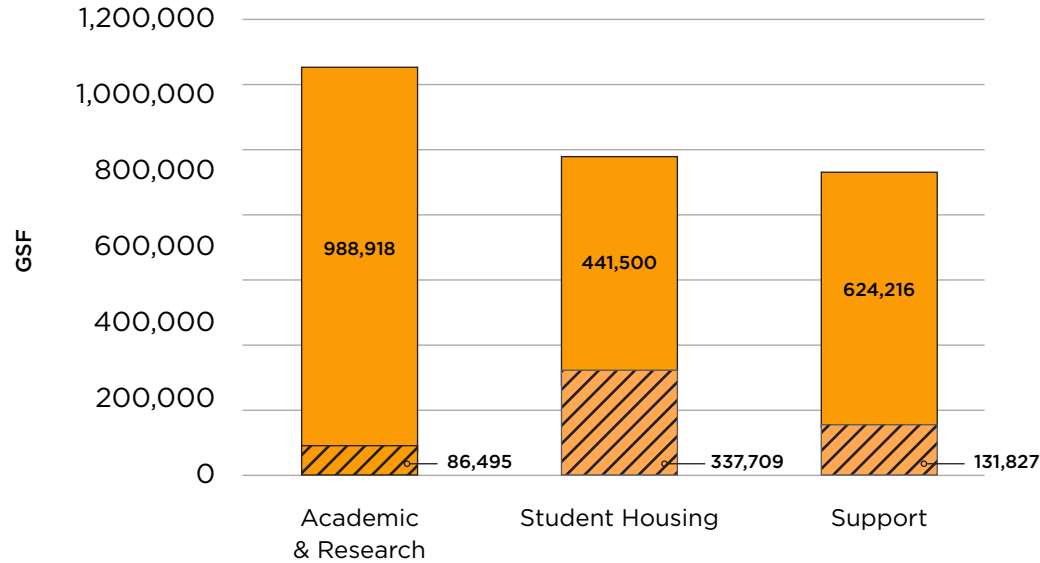
- E. Andy Holt Tower Interior Renovations
- F. Collections & Storage at Middlebrook Pike
- G. Concord Property - Academic Building Storage
- H. Jenny Boyd Carousel Theatre New Building
- I. Melrose Student Success
- J. Presidential Court Building Renovation
- K. Walters Academic Building Renovation
- L. William M. Bass Building Expansion

Athletics Auxiliary Funds

- M. Golf Practice Facility - Weight Room
- N. Haslam Field Expansion
- O. Lindsey Nelson Stadium Renovations
- P. Neyland South Stadium Renovations

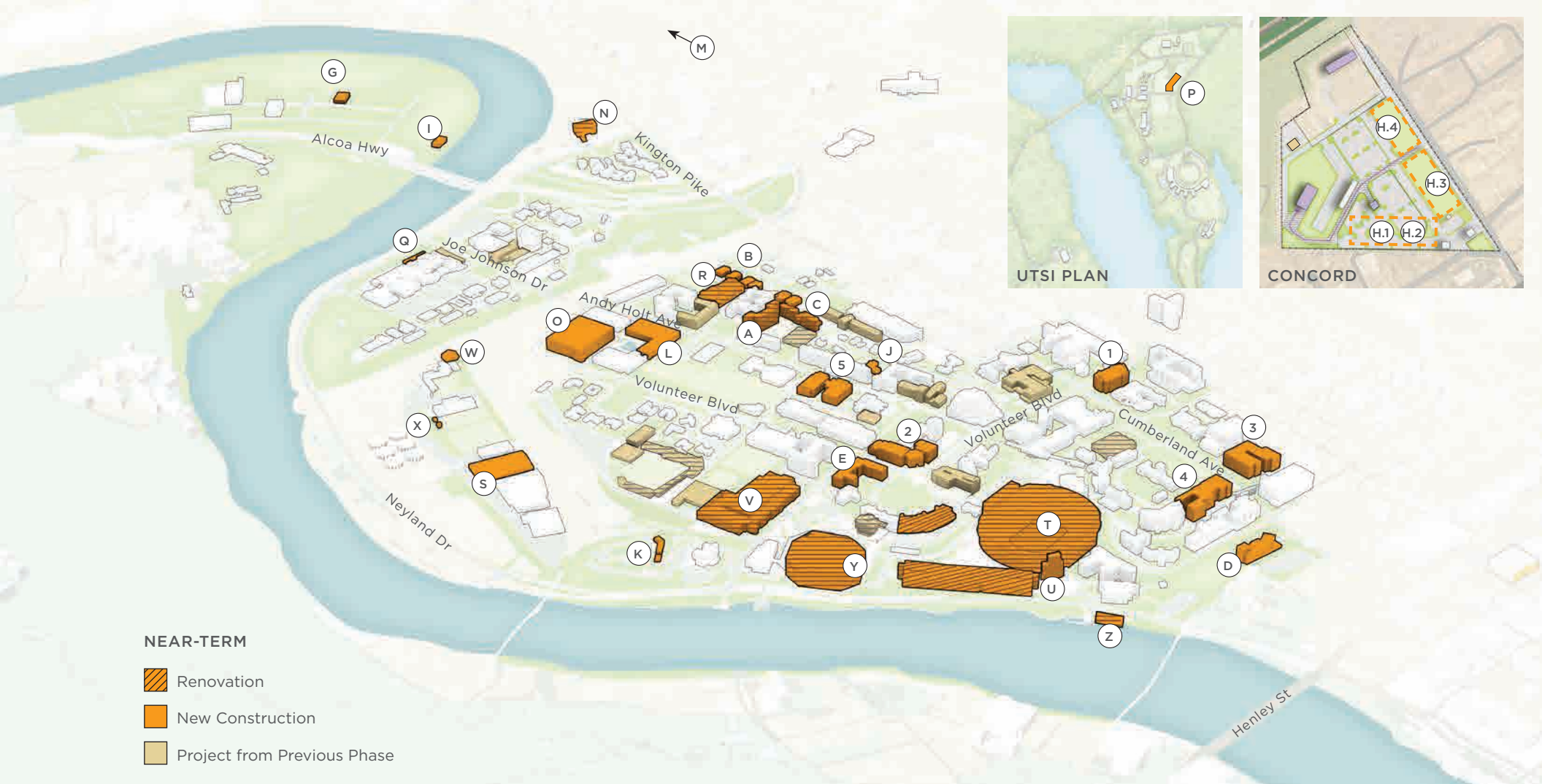
NEAR-TERM

Renovation New Construction






Near-term (0-5 years)

Five interdisciplinary academic and research buildings renew aging facilities and address space deficiencies in the basic, behavioral, and health sciences, humanities, arts and architecture on the Hill and at interdisciplinary learning hubs. Immediate housing needs are addressed with construction and leasing of 5,000 beds and additional capacity for Greek and affinity housing along Caledonia Avenue. Athletics facility renewal and expansion competitively position UT Knoxville for the future and enhance the spectator experience. The proposed UT Drive Garage achieves 1,000 additional parking spaces. A new innovation and research building is also planned at UTSI.



NEAR-TERM

-  Renovation
-  New Construction
-  Project from Previous Phase

State Funds

1. Chemistry Building (Panhellenic Site)
2. Interdisciplinary Classroom/Humanities Building
3. Interdisciplinary Health, Research & Clinic (Jessie Harris Site)
4. Interdisciplinary Research (Dabney-Buehler Site)
5. Interdisciplinary Academic Building (Temple Site)

Housing Auxiliary Funds

- A. Carrick Renovation or Replacement
- B. Greek Housing Expansion
- C. Reese Renovation or Replacement
- D. Second Creek Student Housing (potential partnership with City of Knoxville)
- E. Volunteer Blvd and Lake Loudoun Blvd Residence Hall

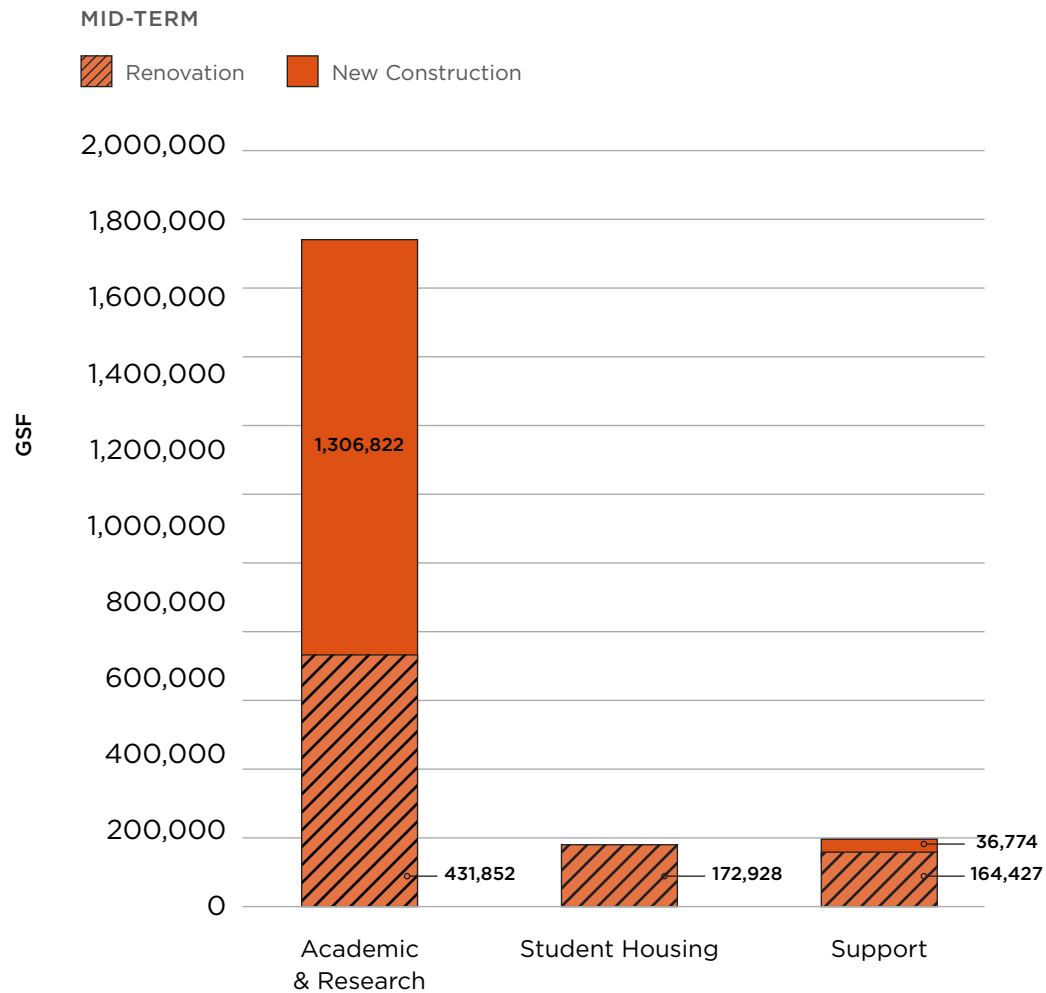
E & G Residual and Donor Funds

- F. Communications Building Renovation
- G. Computing and Data Building
- H. Concord Property - Facilities Services, Facility Services Surplus and Storage; Fleet Management; Public Safety Building

- I. Cultural and Recreation Center - Cherokee Farm
- J. Frieson Black Cultural Center Expansion
- K. Grounds Operations Support Building
- L. TRECS (Tennessee Recreation Center for Students) Expansion
- M. Sutherland Support Building
- N. UT Culinary Institute & Creamery Site Redevelopment
- O. UT Drive Garage
- P. UTSI Innovation Building #1
- Q. Vet Med - Small Animal Hospital Renovation

Athletics Auxiliary Funds

- R. Goodfriend Tennis Center Renovation
- S. Indoor Track Practice Facility
- T. Neyland Stadium East Renovation
- U. Neyland Stadium Hotel and G10 Redevelopment
- V. Neyland Thompson Sports Center Renovation
- W. Sherri Parker Lee Softball Stadium Expansion
- X. Soccer Coaches' Office Building
- Y. Thompson Boling Arena - River Club
- Z. Wayne G Basler Boathouse Improvements and Addition






Mid-term (5-10 years)

Existing academic and research buildings are identified for major renovation including Communications and Student Services, the Art and Architecture building, TRECS, Morgan Hall, and the Main Academic Building at UTSI in Tullahoma. At the UTIA campus, existing land and facilities are optimized with additions to Morgan Hall and Veterinary Medicine, a parking garage topped with greenhouses, and an interdisciplinary academic and research facility adjacent to the new Energy and Environmental Science Research Building serving as a gateway landmark from Joe Johnson Drive. On the Hill, demolition of aging facilities enables redevelopment. Demolition of Walters enables construction of an interdisciplinary instructional building and demolition of the Hoskins library addition unlocks a redevelopment opportunity paired with renovation of the original Hoskins building. Demolition of HPER unlocks a redevelopment opportunity to extend active uses along the Andy Holt Avenue corridor and space to relocate the ROTC programs. A new research building at the UT Research Park at Cherokee Farm continues the build-out of the research park and supports industry-university partnerships.



MID-TERM

-  Renovation
-  New Construction
-  Project from Previous Phase

State Funds

- | | |
|--|---|
| 1. Academic Building (Circle Park Site) | 7. Morgan Hall Building Addition and Renovation |
| 2. Art & Architecture Building Renovation | 8. UTSI Main Academic Building |
| 3. College of Veterinary Medicine Research Space and Expansion | 9. UTSI Renovation Research Lab Building |
| 4. Communications & Student Services Building Renovation and Addition | 10. UTSI TALon Lab Building Addition |
| 5. Interdisciplinary Academic, Research Learning Commons Building (Racheff Site) | |
| 6. Interdisciplinary Instructional Building (Walters Site) | |

Housing Auxiliary Funds

- A. Clement Hall Redevelopment
- B. UTSI Dormitory Building Renovation

E & G Residual and Donor Funds

- C. Hoskins Renovation and Addition
- D. HPER / ROTC New Building
- E. Research Building at UT Research Park at Cherokee Farm
- F. Stokely Management Renovation for Interdisciplinary Research and Office

- G. TRECS Renovation
- H. UTIA Garden Education and Discovery Center
- I. UTIA Parking Garage with Greenhouses
- J. UTSI C-Star Building Renovation

Athletics Auxiliary Funds

- K. Allan Jones Aquatic Center Renovations and Addition

PARKING

The Knoxville-based campus is becoming more urban, with limited sites available to build large stand-alone parking structures. Where those sites are available, they are optimal for future academic and research facilities.

To date, the campus has operated a mix of surface parking lots and large parking structures. Incorporating parking into new construction, with other uses where appropriate and where site topography is advantageous, would reduce the need to construct large parking garages within the campus core where it may not be the highest and best use.

The master plan includes five parking projects, one of which is a stand-alone garage. Over the ten-year life of the plan, there is a minimal gain of 150 spaces. Based on anticipated enrollment growth, 2,750 spaces would need to be added if current parking policies are sustained.

The master plan proposes an approach of a combination of strategies to address parking demand including:




1. policy changes;
2. pricing structure changes;
3. development of leasing partnerships and satellite parking lots;
4. and, development of additional parking spaces by incorporating structured parking with other uses, where appropriate.

Long-term (10+ years)

Future opportunities for research and academic expansion are identified on the Hill, at UTIA, and at the UT Research Park at Cherokee Farm. The Melrose interdisciplinary hub is identified for future academic expansion with the redevelopment of Massey and the International House. Following the construction of the pedestrian-bicycle bridge over the Tennessee River in partnership with the city of Knoxville, future development parcels adjacent to landing points are opportunities for a mix of uses that engage with the river. The McClung Tower and the Humanities and Social Sciences Building are located centrally, presenting a significant redevelopment opportunity for new academic buildings, in addition to the academic buildings noted in the near-term phase. Build-out of the Greek and affinity housing village south of Cumberland, as well as Laurel Hall north of Cumberland are future opportunities to continue to refine the northern edge of the Knoxville-based campus.



LONG-TERM

-  Renovation
-  New Construction
-  Project from Previous Phase

State Funds

1. Academic and Research Building (Ferris Site)
2. Academic and Research Building (Perkins Site)
3. Academic and Research Building (UTIA NE Site)
4. Academic Building (HSS Replacement)
5. Academic Building (McClung Tower Replacement)
6. Academic Building (UTIA McCord Site)
7. Academic Building Site & Garage (Massey Site)

8. Andy Holt Tower Building Renovation
9. Austin Peay Building Renovation
10. Crops Genetics Laboratory Renovation
Food Safety Building Renovation
11. Interdisciplinary Research Building (UTIA South Site)
12. Nielsen Physics Renovation and Addition
13. Nursing Education Building Renovation and Expansion

Housing Auxiliary Funds

- A. Housing Village
- B. Laurel Residence Hall Redevelopment
- C. Hess Residence Hall Redevelopment

E & G Residual and Donor Funds

- D. Andy Holt Tower Garage Replacement
- E. International House Redevelopment
- F. Mixed Use Building Site - Pedestrian Bridge Landing
- G. South Waterfront Projects
- H. Research Buildings at UT Research Park at Cherokee Farm

OPEN SPACE

The master plan recommends continued investment to refine campus landscapes that enhance the student experience, leverage investment in campus buildings, enhance campus connectivity, improve campus edges and gateways, and provide ecosystem services such as stormwater management.

Stewardship of campus landscapes is a key physical driver strengthening safe and accessible connections within the institution to Tennessee communities, and with the Tennessee River. The master plan proposes diverse landscapes with a variety of scales and character phased to coincide with phased investments in University infrastructure.

NEAR-TERM

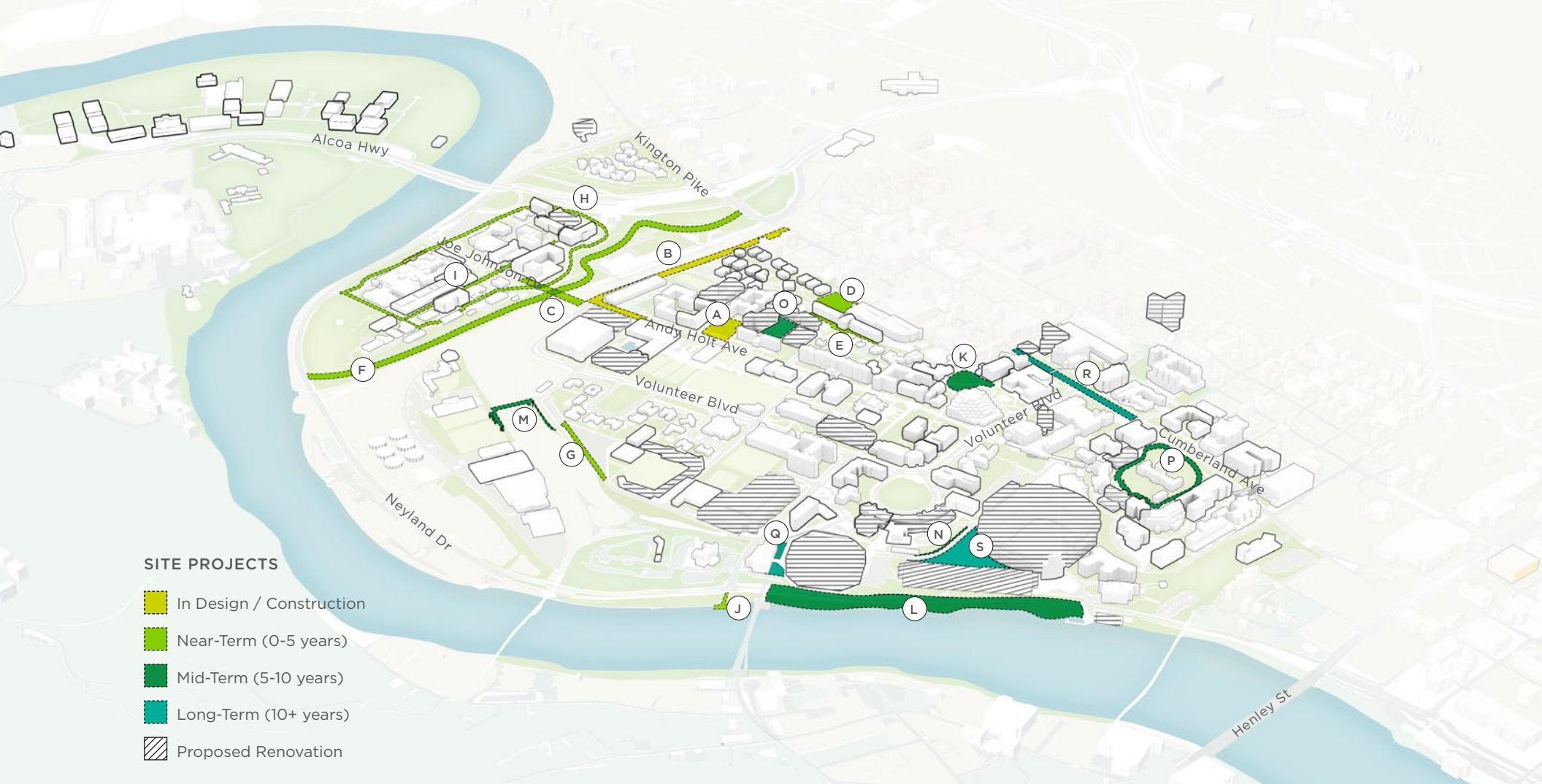
At UTIA, a proposed loop road redefines vehicular circulation and transforms E.J. Chapman Drive into a pedestrian corridor. Slope stabilization and greenway improvements at Third Creek improve natural edges, ecosystem services, and pedestrian connectivity. Pedestrian and bike improvements to Joe Johnson Drive improve connectivity and link north and south portions of UTIA. Streetscape improvements in the campus core at Caledonia, Terrance, Lake, and Todd Helton Drive complement investment in building infrastructure and ensure a consistent pedestrian experience. A renovation of Presidential Courtyard coincides with the redevelopment of Carrick and Reese Halls. The proposed Vol Navy Boat Docks expand access to the Tennessee River at the terminus of Lake Loudon Boulevard.

MID-TERM

Melrose Place is transformed into a green space defined by the Haslam College of Business, Library, the Melrose Student Success building, and the International House. Improvements to hardscape materials and pedestrian crossings at Circle Drive enhance the consistent historic Hill quality of the Hill. Streetscape enhancements at Phillip Fulmer Way improve the pedestrian experience between Thompson-Boling Arena and Neyland Stadium for events and game-day. Enhancements along Neyland Drive include new sidewalks, lighting, plantings screening the Neyland Parking Garage, and consistent signage to improve the University's presence at an important gateway to campus and the pedestrian experience. A pedestrian bridge from Todd Helton Drive to Stephenson Drive provides pedestrian connectivity to Athletics venues for athletes and spectators.

LONG-TERM

In partnership with the city of Knoxville, Cumberland Avenue is improved with consistent lighting, planting, hardscape, pedestrian crossing and signage elements to serve as a key gateway and interface with the community. Also, in partnership with the City, the proposed pedestrian-bicycle bridge landing plaza seamlessly incorporates existing buildings and topography with the proposed pedestrian bridge to the South Waterfront. A new plaza complementing improvements to Neyland Stadium will improve the stadium's southern entrance and opportunities for events.



SITE PROJECTS

- In Design / Construction
- Near-Term (0-5 years)
- Mid-Term (5-10 years)
- Long-Term (10+ years)
- Proposed Renovation

In Design / Construction

- A. Regional Stormwater Park
- B. Volunteer Boulevard Streetscape

Near-Term (0-5 years)

- C. Joe Johnson Road Diet and Bridge Pedestrian
- D. Storm Water Mitigation Bank (Mt Castle Park)
- E. Streetscapes (Lake, Terrace, Caledonia)

- F. Third Creek Corridor (partnership with City of Knoxville)
- G. Todd Helton Dr. Improvements and Realignment
- H. UTIA Loop Road
- I. UTIA Pedestrian Spine
- J. Vol Navy Boat Docks

Mid-Term (5-10 years)

- K. Melrose Place Improvements
- L. Neyland Drive Improvements
- M. Pedestrian Bridge to Stephenson Drive / Soccer Field
- N. Phillip Fulmer Pedestrian Improvements
- O. Presidential Courtyard Renovation (stormwater mitigation bank)
- P. The Hill Hardscape and Pedestrian Crossing Improvements

Long-Term (+10 years)

- Q. City of Knoxville Pedestrian-Bicycle Bridge Landing Plaza
- R. Cumberland Avenue Improvements
- S. Neyland Stadium Plaza

10-YEAR OUTCOMES

Implementation of the 10-year plan will realize 3.1M GSF of non-residential space supporting modern instruction, and research growth, and maintain the quality of the Volunteer experience as the University continues to grow enrollment. In addition to new construction, the 10-year plan addresses deferred maintenance and improves alignment between programs and space through major renovation and demolition of 2.9M GSF. Investments in new construction and renovation will strengthen adjacencies between units such as the arts and humanities through interdisciplinary hubs. 1M GSF of housing is outlined to meet immediate needs while strengthening student life clusters. Physical investments outlined in the master plan both support the transformational strategic vision and meet current campus space needs which are grounded in the stewardship of existing assets through renovation and incremental improvement.

10-YEAR OUTCOMES

- **2.9M GSF (17%)** of renewal through major renovation and demolition of existing campus space.
- **3.3M GSF** of new non-residential space supports modern instruction and research growth, the student experience, and strengthens arts and humanities adjacencies.
- **1M GSF** of student housing meets immediate demand and facility renewals needs.



Illustrative Aerial - Proposed 10-year Development



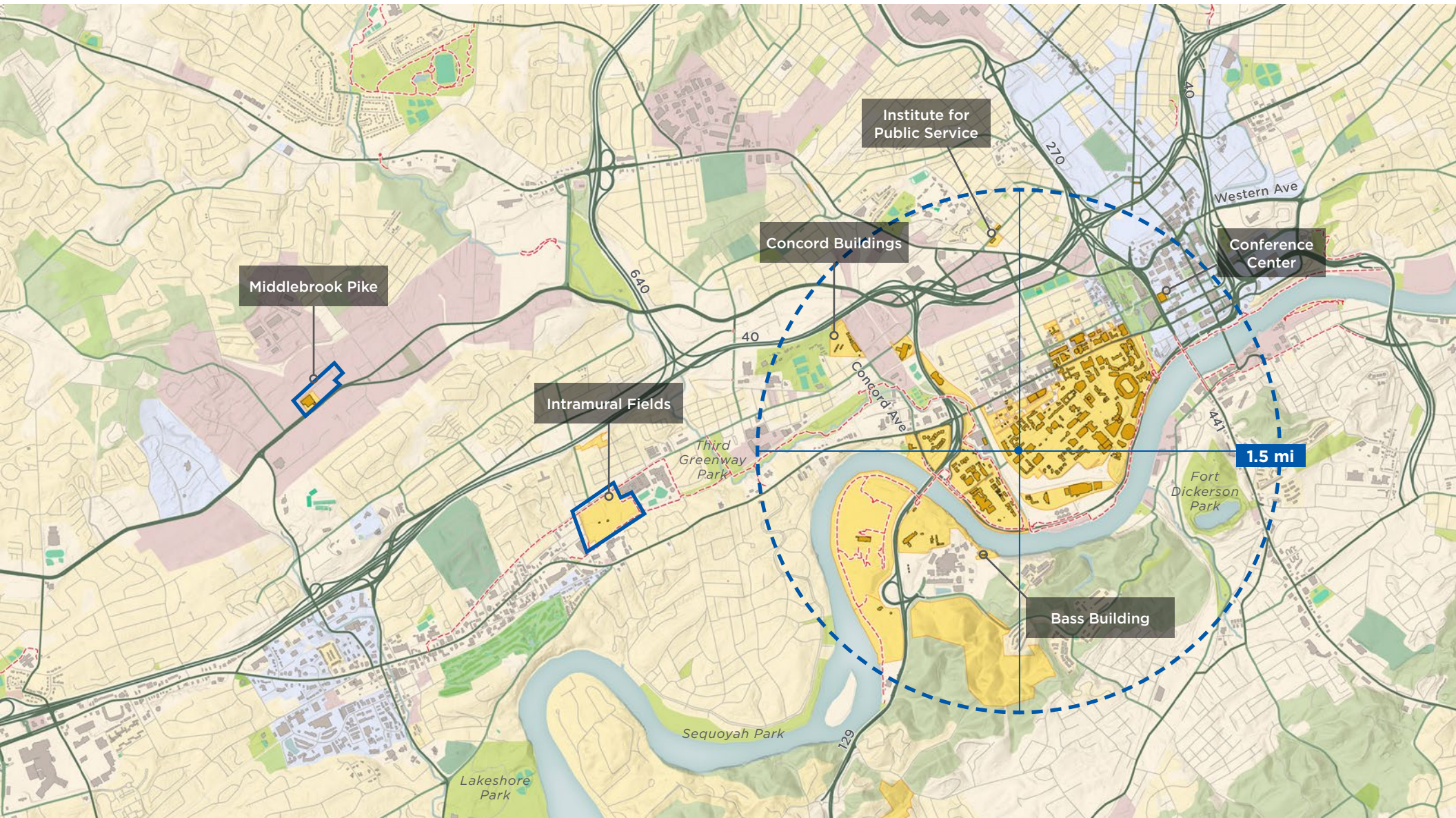
LAND ACQUISITION

Land Acquisition

The University is in a period of transformational growth, fueled by increasing student enrollment, robust academic programs, and research expansion. In Knoxville, the institution's campus are bordered by the Tennessee River and its tributaries, bisected by train yards, and bounded to the north by the Cumberland Avenue corridor. Land for expansion is limited. Partnerships within greater Knoxville, particularly downtown, are an opportunity to support the campus' strategic goals and stewardship of land within the campus core.

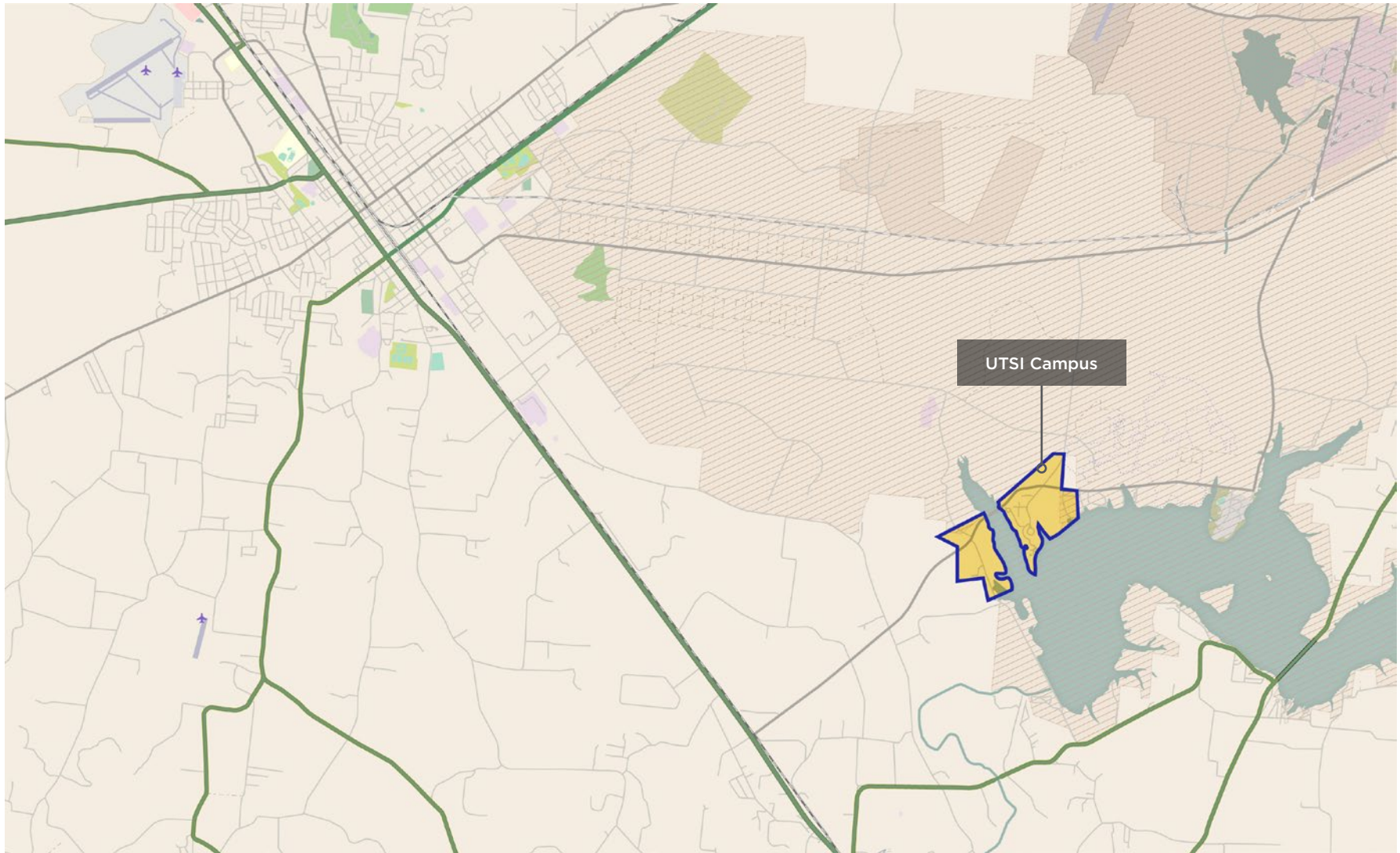
UT Knoxville

The master plan defines its Knoxville-based boundary by identifying a circular zone of influence with a radius of 1.5 miles centered on Andy Holt and UT Drives. This zone of influence captures the contiguous properties of the University, as well as the UT Research Park at Cherokee Farm and the adjacent UT Day Golf Practice Facility to the south and west, and the UT Conference Center to the east. This approach positions the University to consider the strategic acquisition of properties that support partnerships and collaborative initiatives aligned with its mission and strategic plan. While the Ft. Sanders neighborhood to the north and Maplehurst Park to the east of campus do fall within the proposed radius, the University does not intend to acquire historic houses in these districts.



CAMPUS BOUNDARY

— Proposed 2023 Institutional Zone



UTSI BOUNDARY

— Proposed 2023 Institutional Zone

UTSI

The UT Space Institute, located in Tullahoma, plays a strategic role in the University's research and graduate education mission. While geographically distinct from the institution's Knoxville-based campus, the Space Institute offers unique growth opportunities. As such, the property owned by the University in this location was identified as one of several campuses that support the University's mission and strategic vision.



UNIVERSITY OF TENNESSEE

UNIVERSITY OF TENNESSEE



2

Campus Overview

ROLE OF THE MASTER PLAN

The 2023 University of Tennessee Knoxville Master Plan will guide the implementation of physical investments in the campus over a ten-year horizon to ensure the wise stewardship of limited resources and reflect a commitment to shared values.

The plan builds on a history of planning to enhance what makes the University unique, considering topography, engagement with the Tennessee River, and the city, while also embracing key historic buildings and iconic open spaces. A shared vision, the master plan process guides decision making that advances near-term projects. The plan maintains flexibility by identifying long-term development sites and looking at all campus land holdings holistically. The plan outlines both a broad, aspirational vision with practical recommendations for

renovation, efficient use of existing campus space, and technical recommendations for campus systems such as parking, transportation, and sustainable initiatives. Recommendations in the master plan are coordinated with requirements set by the Tennessee Higher Education Commission (THEC) that oversees higher education activities within the state.

Strategic Plan Goals

Cultivating the Volunteer Experience
Conducting Research that Makes Life & Lives Better
Ensuring a Culture Where VOL is a Verb
Making Ourselves Nimble & Adaptable
Embodying the Modern R1, Land-Grant University

Flexible Master Plan

Assessment Themes & Drivers

Connectivity
Sustainability and Open Space
The Volunteer Experience
Interdisciplinarity and Research
Growth and Partnerships

Stakeholder
Engagement and
Feedback

OUR VISION

*A world enriched by our ideas,
improved through action, and
inspired by the Volunteer spirit
of service and leadership.*

Alignment with the Strategic Vision

The master plan seeks to create a physical environment to meet the goals identified in the strategic vision. Composed of five goals, the vision aims to build a flexible campus for the future fostering innovation, research leadership, and collaborative learning experiences to empower learners and advance communities locally and globally. It will distinguish the Volunteer Experience as one characterized by selfless leadership cultivated through high-quality educational opportunities that empower learners of all ages and backgrounds with an affordable education. The next decade presents an opportunity to greatly expand the University's land-grant mission to serve all Tennesseans as a diverse community with a renewed commitment to discovery, creativity, learning and engagement. The University's investments in the physical campus will ensure that the University of Tennessee, Knoxville adapts well to 21st century workforce needs.

Goal

Master Plan Opportunity

CULTIVATING THE VOLUNTEER EXPERIENCE

Demonstrate leadership in providing high-quality educational opportunities for people at every stage of life, whenever and wherever they seek to learn.

- Modernize classrooms
- Provide learners at all levels with opportunities to engage in rich learning and in scholarship that is collaborative, inquiry-based, experiential, affordable, and relevant.

CONDUCTING RESEARCH THAT MAKES LIFE AND LIVES BETTER

Advance the frontiers of knowledge to create a more just, prosperous, and sustainable future through world-class research, scholarship, and creative work.

- Develop transdisciplinary research buildings
- Invest in University-wide infrastructure devoted to collaboration, innovation, and cross-disciplinary exchanges
- Demonstrate leadership in sustainability through the built environment

ENSURING A CULTURE WHERE VOL IS A VERB

Develop and sustain a nurturing university culture where diversity and community are enduring sources of strength.

- Create inclusive open spaces that provide safe, appealing, and accessible civic areas, streetscapes, multi-modal transportation and pathways
- Provide interior and exterior spaces and facilities that foster a sense of belonging, celebrate diversity, and encourage critical discourse

MAKING OURSELVES NIMBLE AND ADAPTABLE

Empower and sustain a culture of collaboration, agility, and innovation throughout the University.

- Invest in spaces that enable innovation and collaboration
- Utilize space efficiently and consider the highest and best use of existing land and resources

EMBODYING THE MODERN R1, LAND-GRANT UNIVERSITY

Connect with every Tennessean and with communities around the world, inspiring future Volunteers to join our diverse community.

- Clarify campus edges and gateways and increase legibility throughout campus
- Leverage property at UT Research Park at Cherokee Farm, UTSI, UTIA, and Oak Ridge for engagement, teaching, and research

PROCESS AND ENGAGEMENT

The master plan is a collaborative process designed to build consensus among diverse stakeholder groups. A five-stage, sixteen-month process featured facilitated, interactive workshops in close coordination with the Department of Capital Projects and engagement with stakeholders and the campus community. The Executive Committee provided direction at key milestones and ensured the master plan reflects the mission and strategic goals of the University. The Advisory Committee represented units across the University and served as a sound board to discuss, vet, and weigh multiple recommendations throughout the planning process. A Space Needs Committee served as key advisors during the space needs assessment and provided insight and a review of initial findings through a university-wide lens.

Observe and Analyze

Held over the course of three workshops, the initial phase of the master plan process began with a campus-wide assessment of the existing conditions. Opportunities and challenges were identified through engagement with the campus community with over 27 listening sessions. The planning team toured campus, collected, and reviewed recently completed and ongoing planning studies to determine their implications for later phases of the planning process. A campus-wide online survey was launched to gather diverse feedback from students, faculty, and staff. Assessment of existing space included initial data collection of space distribution across campus, and preliminary instructional space utilization.

DESIGN WORKSHOP SCHEDULE AND ORGANIZATION





▲ *On-campus workshops for scenario planning*

Envision

A synthesis of existing conditions and programmatic needs were reviewed with the campus community, key stakeholders, and the master plan committees. The planning team held an open house session at the Student Union and Frieson Black Cultural Center. The identification of five planning principles and a concept plan provided a framework for decision-making to tie the mission, vision, and values of the University with the physical plan. Both provide an important standard by which the plan and its implementation can be assessed.

Generate

Three workshops focused on scenario planning were organized by geographic areas. The first workshop focused on the eastern portion of the campus, including The Hill, and the western portion of the campus, including UTIA. The second workshop identified scenarios in the central portion of campus and the third and final involved a scenario-planning workshop focused on campus edges and partnerships. Workshops two and

three reviewed additional scenarios from prior workshops based on feedback and the resulting exploration of new opportunities. Each workshop featured a presentation of existing opportunities and challenges based on findings in the observe and analyze phase, a tour of the geographical focus area, and an interactive presentation of design scenarios. Participants in each session represented a broad cross-section of stakeholders, allowing all participants to hear the needs and desires of their peers and to weigh various program opportunities for each suitable building site and campus landscape.

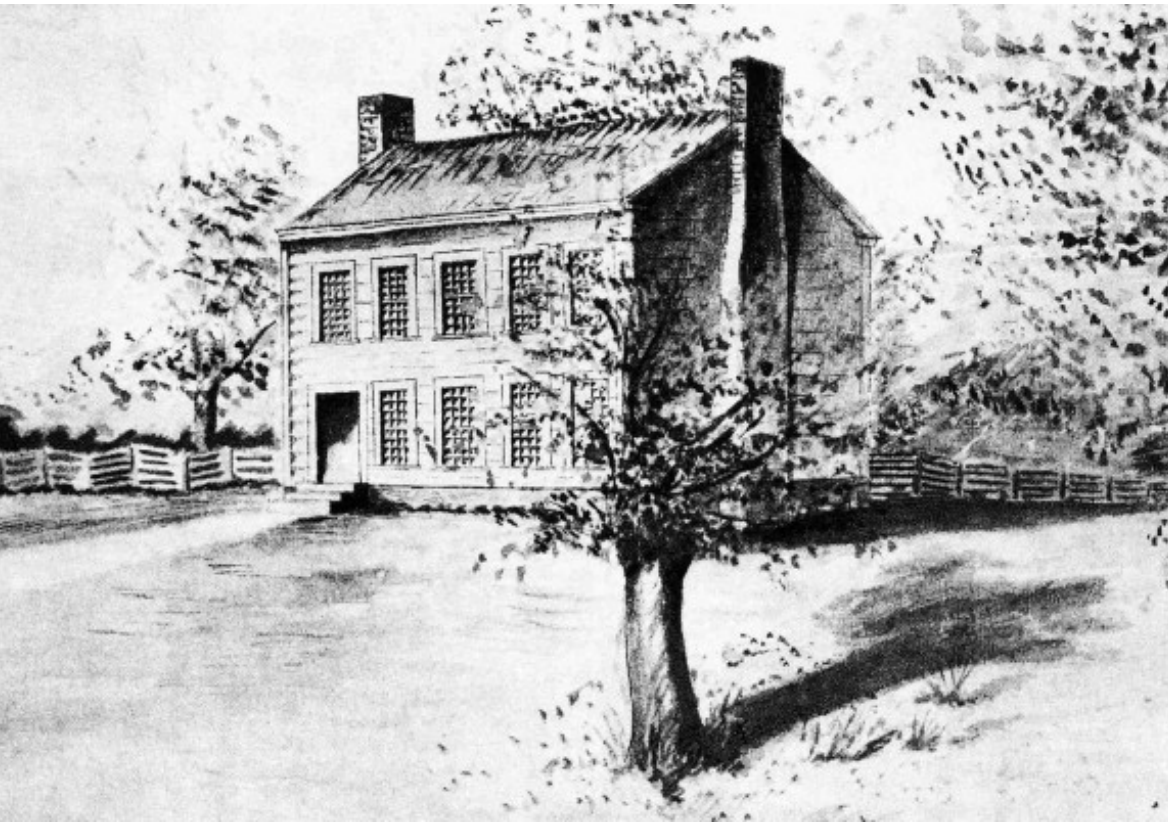
Synthesize

Scenario-planning sessions were refined with a campus-wide perspective and the feedback was combined to form a preferred draft plan scenario aligning with the strategic plan. Review from stakeholders, Advisory and Executive Committees further refined concepts and created a draft phasing plan for implementation. Emerging near-term and mid-term projects were further refined to form the final plan.



On-campus engagement workshops

BRIEF HISTORY



The origins of Tennessee's flagship University date to September 10, 1794, with its first president Rev. Samuel Carrick who taught classical education through seminary courses offered from his home. Originally named Blount College after Tennessee's first governor, William Blount, the institution was renamed to East Tennessee College in 1807. Following Carrick's death in 1809, the sale of federal lands funded the purchase of a 40-acre property known today as "the Hill" where the college later moved in 1828 after a period of closure. In the decades that followed, the school's opening generated a graduating class of under 100 and a faculty of five, yet it was recognized as a flourishing institution with strong growth in public education within the region of East Tennessee. Thanks to the strong advocacy of the college's fifth president, Joseph Estabrook, the name of the college changed again in 1840 to East Tennessee University ratified under the Tennessee legislature.

◀ *Blount College Illustration, 1794*

Closed during the civil war, the campus and its landscapes were heavily damaged. Land Grant funds through a program known as the Morrill Act of 1862 and federal funding for wartime damages aided the institution's recovery and shifted the curriculum to prepare students for military service through courses on agricultural, military science, and mechanical arts subjects. The college adopted educational areas focused on law and medicine in the years that followed. In 1879, the growing University would once again have its name changed to The University of Tennessee in a strategic move to secure future financial support through the state legislature.

After the college preparatory and military departments were eliminated in 1887 under Charles Dabney's presidency, great changes began to be implemented for expanding the public education experience at the University of Tennessee. In 1891 the University of Tennessee football program was started and, in 1902, adopted the moniker "Volunteers" from the state's historic contribution of volunteers to the War of 1812. Academic programs were broadened to include women in 1893. In 1902, Brown Ayres was elected to succeed Charles Dabney as the new president for the University - embarking on an era of growing a modern approach to education across the state for the twentieth century. Following a 1952 federal court order allowing Black Americans admission to the Law School, the Board of Trustees voted in 1961 to make all educational programs available to Black undergraduates.

The University of Tennessee Space Institute was established in 1964 to focus on research in engineering, physics, mathematics and aviation following initiatives from the U.S. military and NASA to expand graduate



space education. Four years later in 1968, the UT Institute of Agriculture (UTIA) was formed to merge three colleges now known as the Herbert College of Agriculture, AgResearch, and UT Extension, adding the College of Veterinary Medicine in 1974.

Today, The University of Tennessee Knoxville offers an extensive variety of programs ranging from agriculture, architecture and planning, the arts and sciences, business, communications, education, engineering, human ecology, information sciences, law, nursing, social work, and veterinary medicine with offerings in both undergraduate and graduate professional degrees. The UT Knoxville campus has offerings in over 400 undergraduate and graduate program degrees.

▲ *The Hill, 1826*

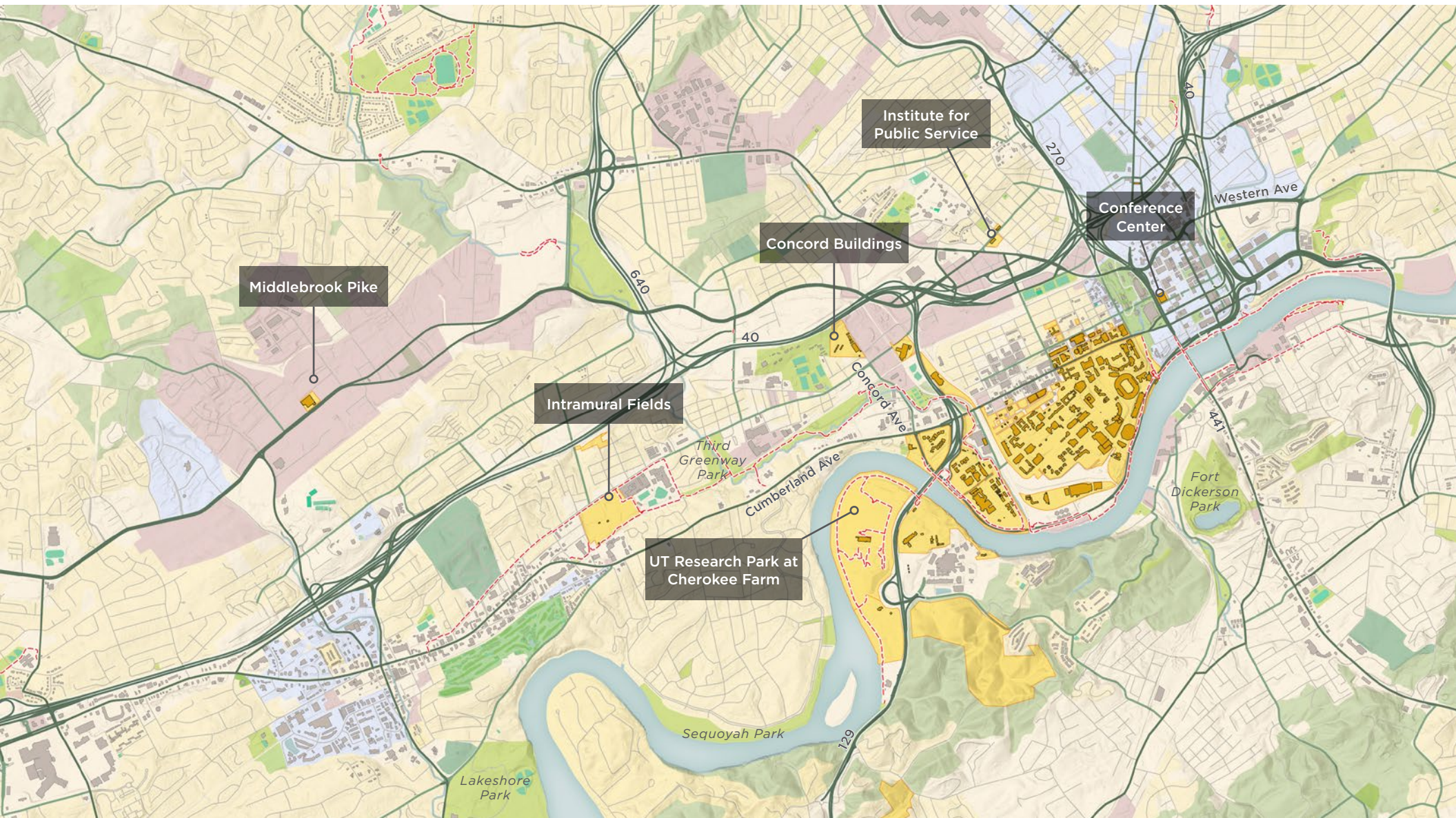
EXISTING CONDITIONS ANALYSIS



Regional Context

Located in the City of Knoxville within Knox County in Eastern Tennessee, the University of Tennessee, Knoxville campus is situated within the gateway to the Great Smoky Mountains National Park, a 45-minute drive to the east, and at the convergence of the French Broad and Holston Rivers. Located at the crossroads of Interstates 75 and 40, UT Knoxville is 180 miles from Nashville to the west on I-40 and 115 miles from Chattanooga the south on I-75.

The primary campus is located to the west of Knoxville's downtown and bound broadly to the north by Cumberland Avenue and the Fort Sander's neighborhood, and to the south by Neyland Drive and the Tennessee River. While Second Creek and the CSX railway bisect the UT Institute of Agriculture (UTIA) from the center of campus, these barriers are bridged by Joe Johnson Drive. The University of Tennessee Knoxville is one of four universities in the UT system and totals approximately 910 acres. Ten AgResearch and education centers are located throughout the state as well as three 4-H youth development program centers. Across the Tennessee River, the Urban Wilderness offers over 1,000 acres and 112 miles of paved greenways and trails.



UT KNOXVILLE CAMPUS PROPERTIES

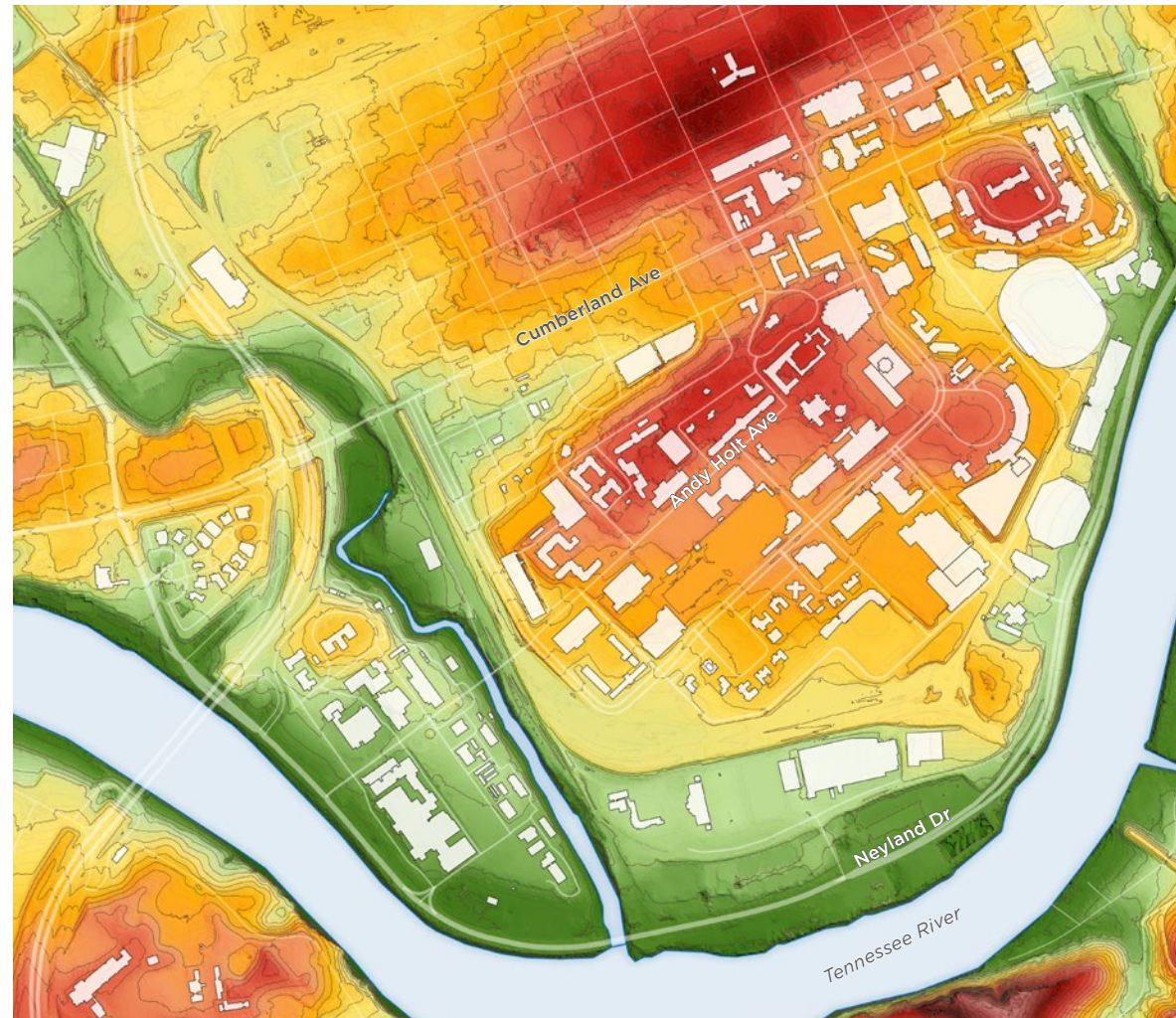


- UT Knoxville Campus - 2023 Master Plan
- UT System Campus

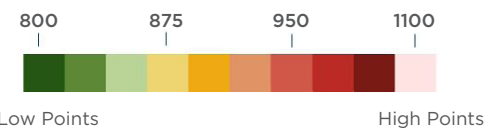
Outside of Knoxville, two locations are included in the University of Tennessee organization – the University of Space Institute (UTSI) in Tullahoma, and the University of Tennessee Oak Ridge Innovation Institute location at the Oak Ridge National Laboratories. UTSI, under the purview of the Tickle College of Engineering, is a center of education, innovation, and research on advancing Tennessee’s leadership in the aerospace and defense industries. The Tullahoma location, 60 miles north of Huntsville, Alabama, is well positioned for industry partnerships in these fields. UT-Oak Ridge Innovation Institute aligns with collocated research laboratories, focusing on emerging, industry and workforce needs for advancing the energy-related agenda of the country. This 2023 Master Plan is focused on planning for the UT Knoxville and UTSI campuses.

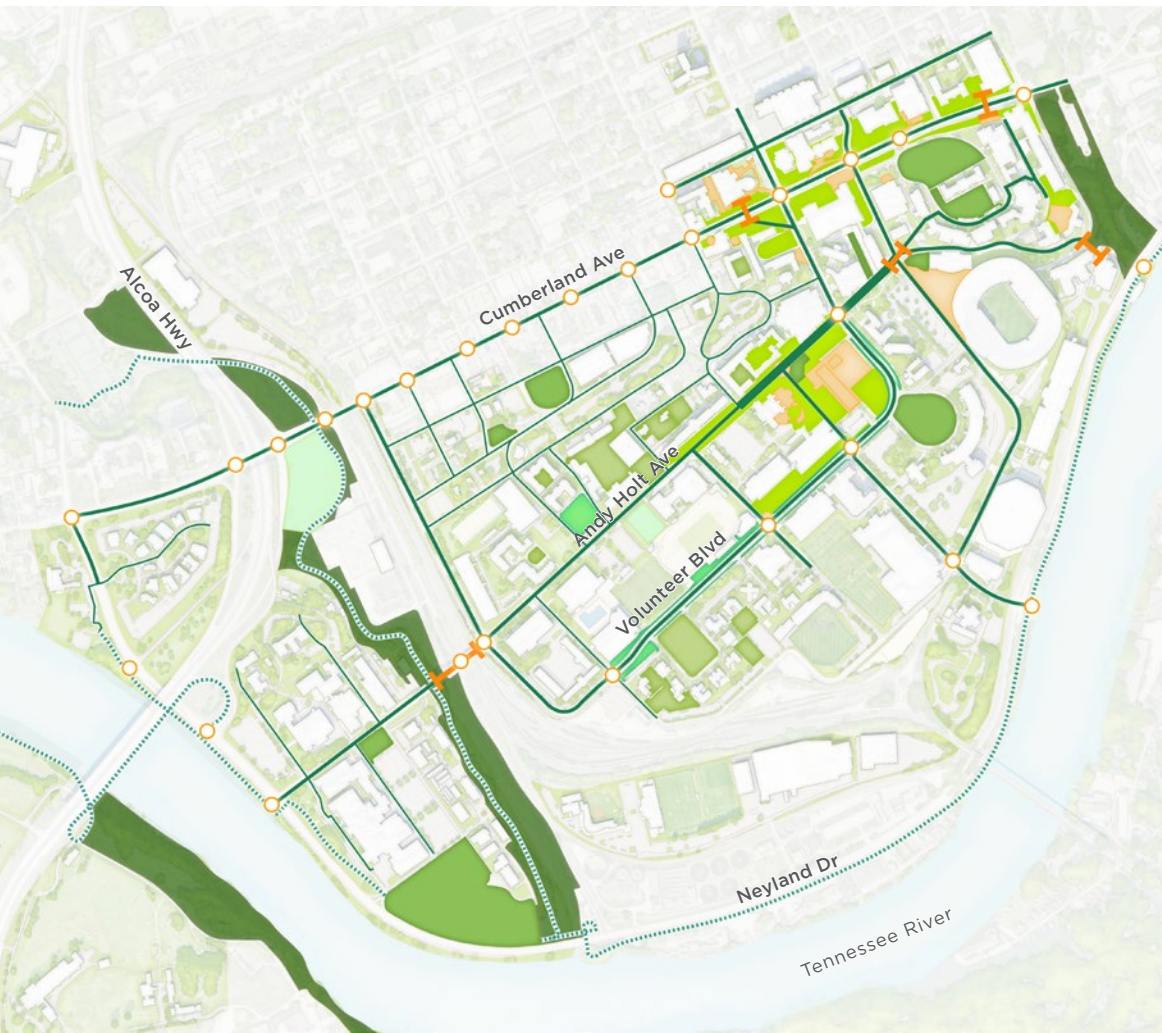
Topography

Topography significantly influences the campus experience with differences in elevation over 130 feet from high to low points. Natural high points of the campus reside on The Hill and along the Andy Holt Ave pedestrian walkway east-west corridor. In many cases, stairs are necessary to navigate the dramatic topography on The Hill; ramping, building entrances and internal elevators at Austin Peay Building and the Science and Engineering Research Facility are utilized for accessible routes. Bridges over Philip Fulmer Way and at Joe Johnson Drive over Third Creek navigate valleys and complete a gentle sloping pedestrian corridor connecting The Hill to UTIA. The natural bluffs of the Tennessee River can both limit access to the water's edge and provide impressive vistas. Circle Park and its adjacent buildings offer dramatic views to the south across the river. The central area of campus moving south towards the river offers relatively flat plateaus at the Greek Village and athletics facilities along Stephenson Drive. Slopes south of Cumberland Ave leading to Third Creek separate the Hill from destinations downtown and require pedestrians to utilize stairs or buildings to navigate this part of campus. Similarly, steep slopes at Caledonia and Terrace Avenues limit pedestrian access from campus to points north.














TOPOGRAPHY





OPEN SPACE NETWORK AND STREETSCAPES

- | | | |
|---|---|---|
|  Main Pedestrian Street Corridor |  General Open Space |  Wooded Open Space |
|  Secondary Pedestrian Street Corridor |  Housing Green |  Plaza |
|  Primary Pedestrian Path |  Park |  Bridge |
|  Signal with Crosswalks and Pedestrian Equipment |  Recreational Open Space Plaza | |

Open Space

UT Knoxville has a variety of landscapes that serve as critical links between buildings, people, and culture. Users experience open spaces in a variety of ways: from gathering and recreation to contemplation and transportation. Open spaces also provide critical ecosystem services including stormwater management that plays a role in the broader function of campus systems. The campus features strong linear spaces that serve as both amenities and key pedestrian corridors. The pedestrian-only Andy Holt Avenue serves as a key pedestrian thoroughfare but also features active edges, seating and smaller adjacent open spaces such as Haslam Plaza, and the Humanities and Social Sciences and Art and Architecture quad that provide respite from the corridor. Open spaces of a variety of scales implement stairs and ramps to navigate topography while acting as features in the landscape such as the amphitheater adjacent to Andy Holt Avenue. Larger hardscapes and lawns such as the Ayres north plaza, south lawn, Humanities Lawn, and McClung Plaza are opportunities for further refinement and activation with interventions such as a variety of seating. The University has made significant progress in improving the consistency of open spaces, however some spaces could use investment such as the Presidential Courtyard and Mount Castle Park. An ecologically rich greenbelt and wooded corridor surround the perimeter of the campus.



Pedestrian Network

The University has made numerous investments in pedestrian corridors on campus, including constructing the pedestrian walkway starting in 2004 to establish the primary east-west pedestrian corridor connecting The Hill to Hodges Library and points west along Andy Holt Avenue. Heavy pedestrian congestion and conflicts persist along Volunteer Boulevard and Phillip Fulmer Way, particularly with pedestrians moving east-west. Two pedestrian bridges utilize existing topography to successfully cross the busy Cumberland Avenue. The high-quality pedestrian experience present on the east-

west pedestrian walkway is not consistent throughout campus. In areas west of Volunteer Boulevard and between Cumberland and Andy Holt Avenue, pedestrian connectivity is limited. Caledonia Avenue lacks sidewalks altogether and consistent lighting is lacking. At UTIA, Joe Johnson Drive bisects major pedestrian routes and can be intimidating to cross due to the abundance of automobile traffic. The Third Creek, Neyland, and Second Creek Greenways offer pedestrian connectivity to Downtown Knoxville and the Knoxville region, but connectivity could be improved between UTIA and Third Creek Greenway.



▲ Volunteer Boulevard Looking East

Street Network

ROADWAYS

The Knoxville campus is bordered by Cumberland Avenue to the north, Neyland Drive on the west and south, and Second Creek to the east. Campus facilities also extend north of Cumberland Avenue, east of 17th Street and south of Clinch Avenue. The UTIA connects to the central part of campus via Joe Johnson Drive to the southwest.

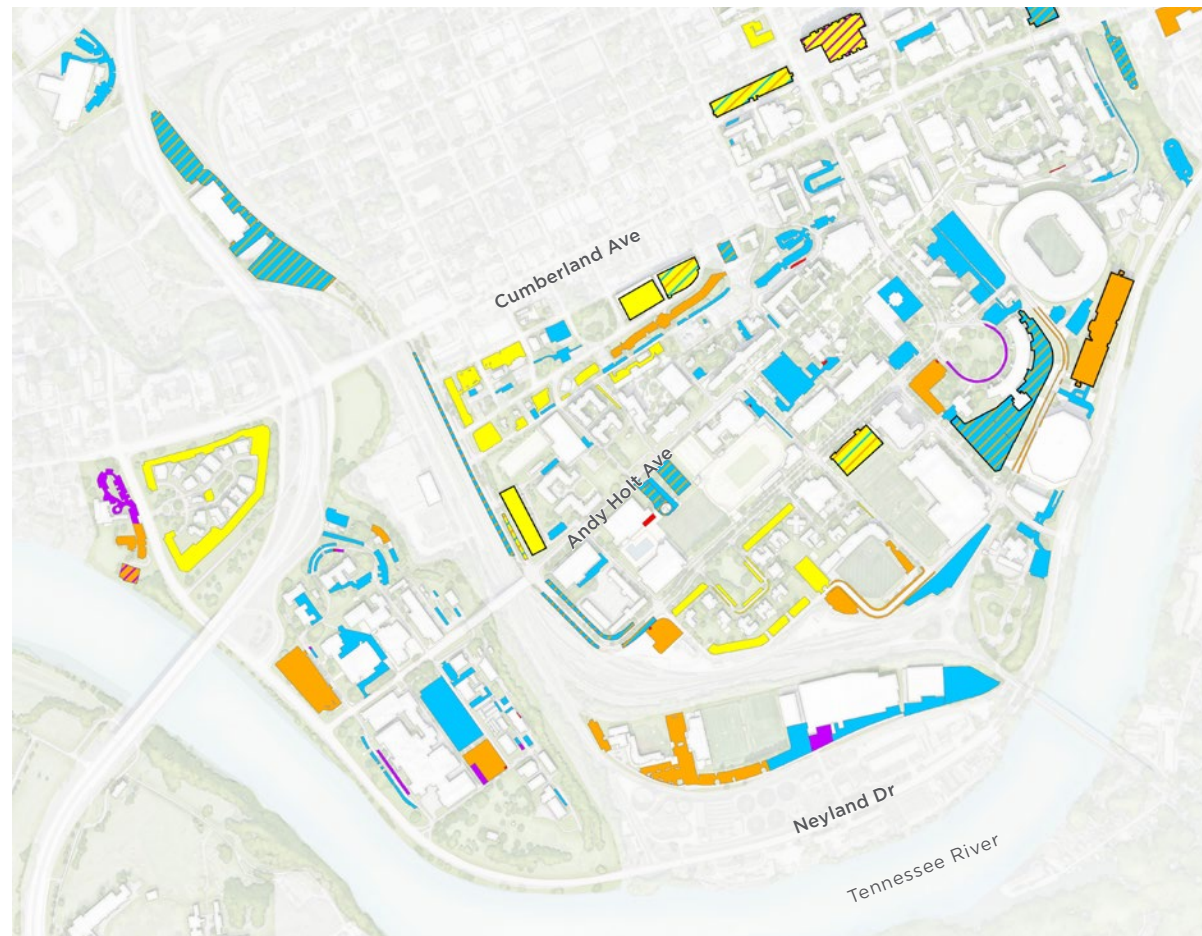
Regional access is provided to the University by interstates and highways allowing access to campus from every direction with formal gateways along Cumberland Avenue and Neyland Drive. From the west, motorists can access campus by way of Interstate 40, Kingston Pike (US-11), Western Avenue, and Middlebrook Pike (SR-169). From the east, Interstate 40, Magnolia Avenue (US-11), and James White Parkway (SR-158) provide major pathways to campus. Major routes are Interstate 275 and Broadway (US-441) to the north and Chapman Highway (US-441) and Alcoa Highway (US-129) to the south.

EXISTING PARKING CONDITIONS












There are approximately 17,900 parking spaces on campus with 4,800 designated for commuter students, 7,000 for staff, and 6,100 for non-commuters.

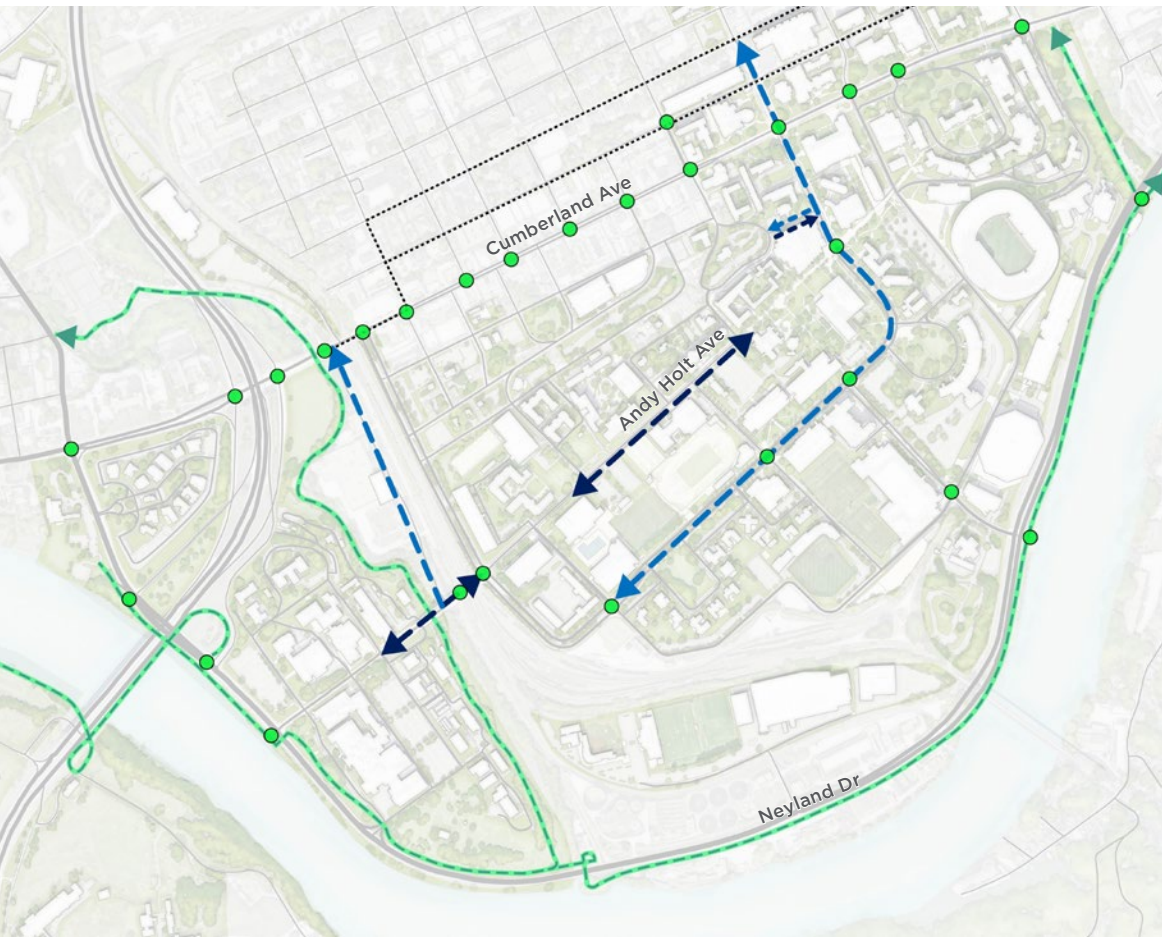
A parking surplus exists in terms of the number of spaces provided. In general, parking lots located proximate the core of campus are heavily used, and parking facilities on the periphery have additional capacity. Available parking spaces (surplus) are not in locations desired by the campus community based on current policies and pricing.

Recent campus and adjacent area developments have reduced parking supply. Increases in residential development on Cumberland Avenue have created an increase in demand for non-commuter residential parking. Other projects have reduced the available parking supply on campus through the elimination of on-street parking in favor of greenspaces or multi-modal uses, such as along Volunteer Boulevard and Andy Holt Avenue. Visitor parking is also very limited on campus and requires walking long distances to get to most campus destinations.



PARKING INVENTORY

 Commuter Parking	 Commuter/Visitor Parking	 Structured Parking Facility
 Non-Commuter Parking	 Non-Commuter/Visitor Parking	
 Staff Parking	 Staff/Commuter Parking	
 Motorcycle Parking	 Staff/Commuter/Non-Commuter	
 Visitor Parking	 Staff/Visitor Parking	



BICYCLE INFRASTRUCTURE

- Signal with Crosswalks and Pedestrian Equipment
- Signal
- - - Greenway
- ⋯⋯⋯ City of Knoxville Designated Bike Route

- - - Dedicated Bike Lane
- - - Sharrow (marked shared lane for vehicles and bicycles)
- ↔ Bridge Connection

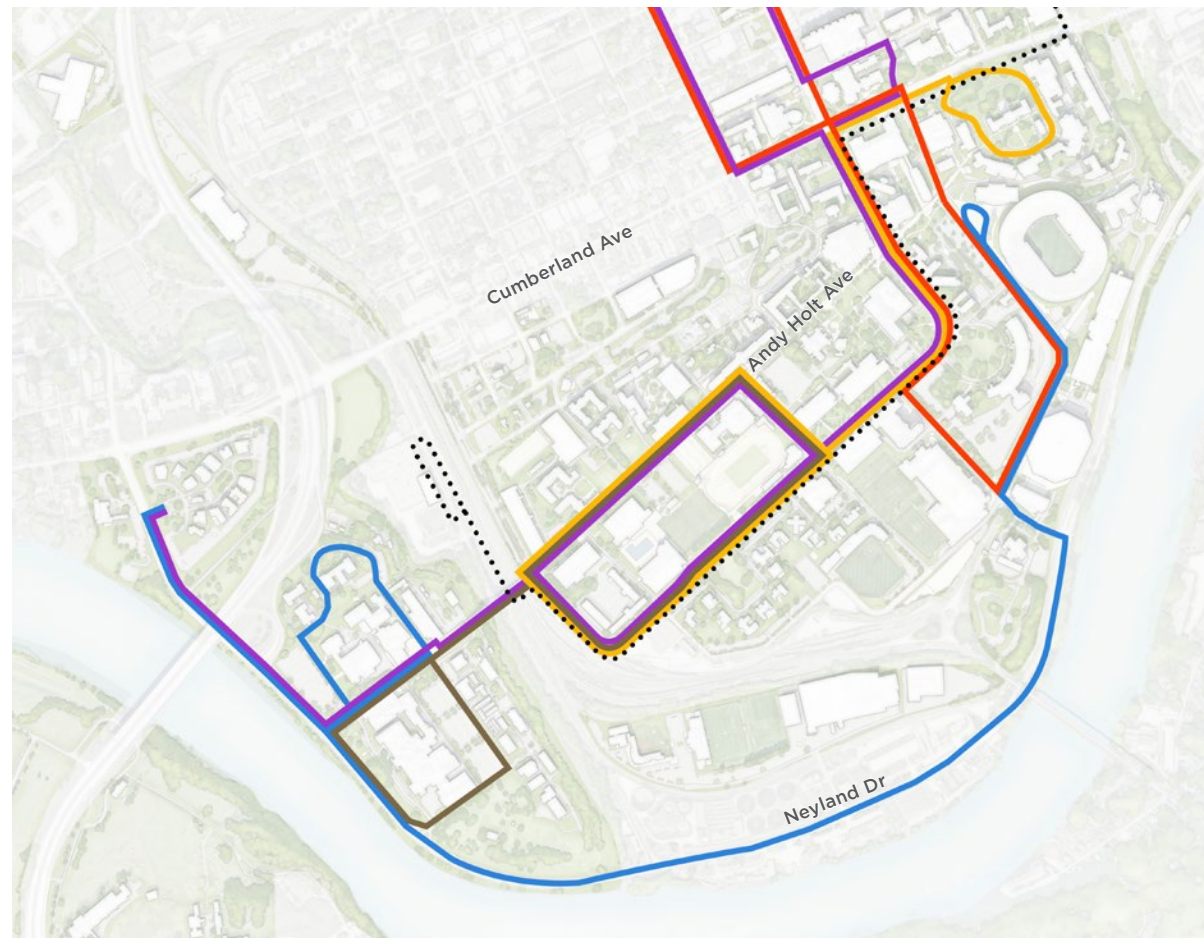
Bicycle and Transit Network

The bicycle network on campus is limited and inadequate due to the lack of dedicated facilities and the perceived difficulty of navigating campus topography. The University’s first cycle track, a dedicated bicycle path, is located adjacent to Fred D. Brown Residence Hall, with an extension currently under construction along a portion of Andy Holt Ave. The extensive network of greenways supports bicycle connectivity to regional recreational areas. Bicyclists could be better accommodated with the incorporation of shared travel lanes, bike lanes, and cycle tracks, and additional bike racks. Some infrastructure solutions may require the elimination of on-street parking, as seen on Volunteer Boulevard. In some areas speed tables exist which can present a hazard for bicyclists. The campus has realized an increase in micromobility — the use of e-bikes, motorized skateboards, and scooters — which helps navigate the difficult terrain, reduces parking demand in areas closest to popular destinations, and contributes to more sustainable practices.

UT Knoxville is served by both on-campus and City of Knoxville transit services. The Knoxville Area Transit (KAT) system has three routes and one free trolley route with stops throughout campus. Route 11: Kingston Pike connects West Knoxville to Downtown Knoxville with several stops along Cumberland Avenue; Route 42: Fort Sanders/ UT Hospital connects Clinch Avenue, north of campus, to Downtown Knoxville and provides transit access to UT Medical Center; and Route 44: University Park joins off-campus housing and South Knoxville to campus. The Orange Trolley Line, a free service, connects passengers from campus to University Commons and downtown Knoxville.

UT Knoxville's on-campus transit system, the T, provides free campus circulation for staff, faculty, and students. Recent technological advances, such as real-time GPS tracking, have increased the popularity and reliability of the T system. While the T operates five daily fixed routes and has several shuttles to off-campus housing, the UT Research Park at Cherokee Farm, Oak Ridge National Lab, and Pellissippi State Community College, service to campus periphery and off-campus sites could be improved. On-demand services for faculty, staff, and students are also provided. The bicycle and transit networks are important infrastructure provided to the campus population to support less carbon-intensive ways of moving than single occupancy vehicles. According to the reporting data for the STARS program of the Association for the Advancement of Sustainability in Higher Education (AASHE), 23% of students report using more sustainable options of transportation to and from campus while the majority rely primarily on single occupancy vehicles. Looking at faculty and staff commutes, 10% of the University's population reports using more sustainable options while 90% rely primarily on single occupancy vehicles.

Transportation has obvious implications for land use, including the substantial amount of UT Knoxville's real-estate that is allocated to parking. Accelerating strategies to reduce reliance on single occupancy vehicles is both part of advancing this plan's safe, multimodal transit strategy as well as part of advancing UT Knoxville's work in sustainability.

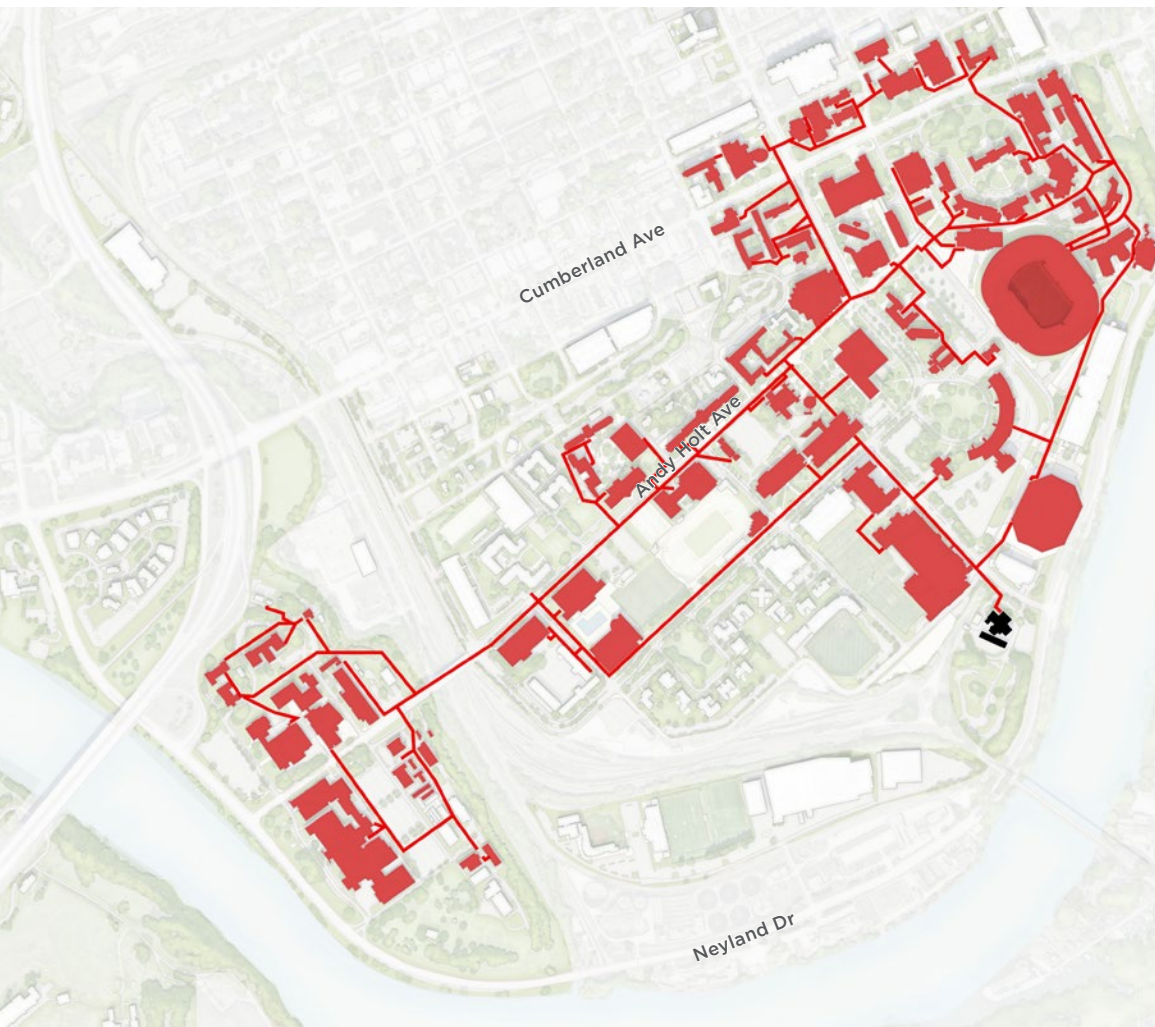


CAMPUS TRANSIT ROUTES "THE T"

- Ag Express Route
- Late Nite Route
- Neyland Express Route
- The Fort Route
- The Hill Route

KAT ROUTE

- Free Trolley "Orange Route"



STEAM INFRASTRUCTURE

- Steam Plant
- Connected Building
- Distribution Piping

Utilities

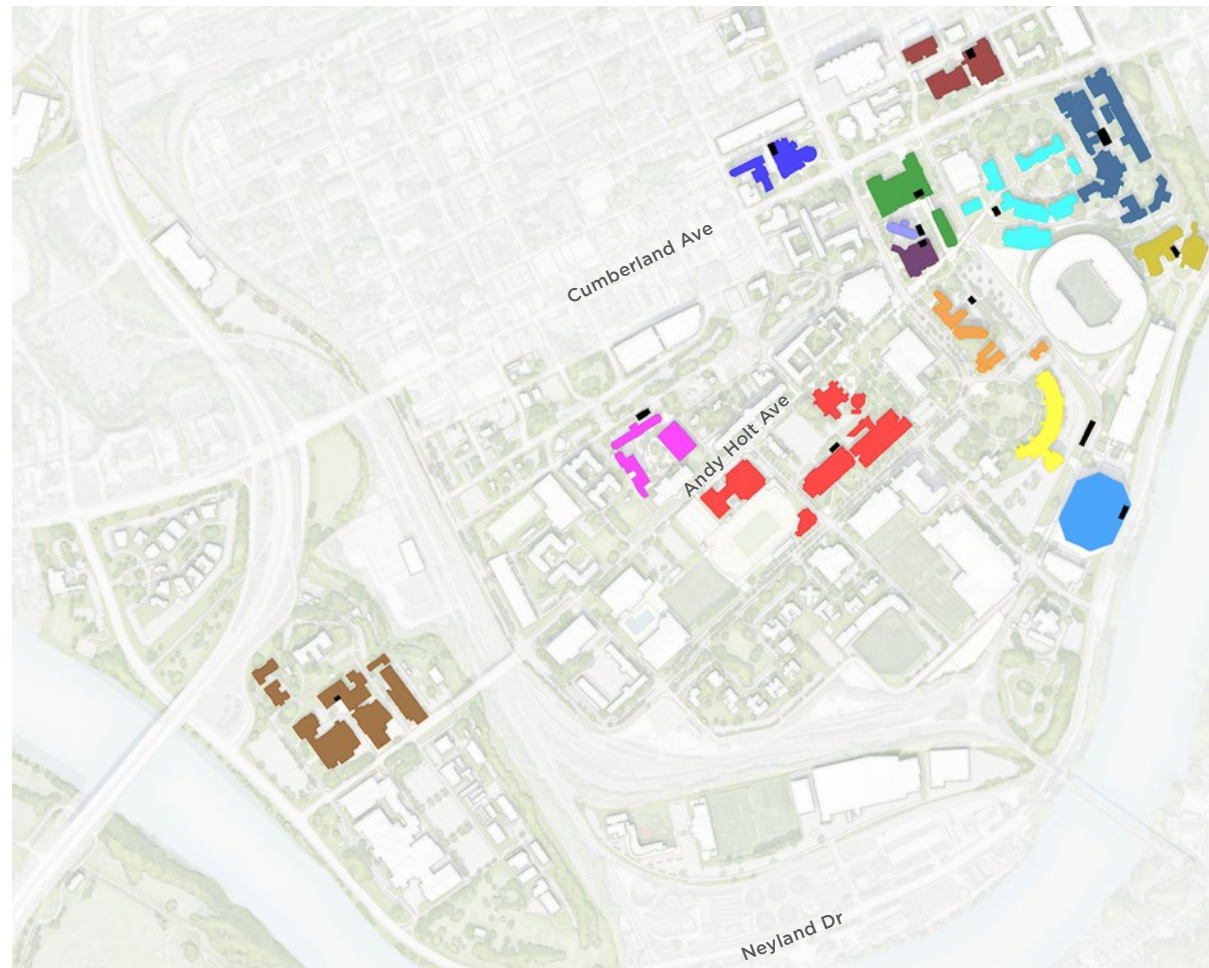
The University of Tennessee Knoxville owns, operates, and maintains regional chilled water systems and campus-wide steam, electrical, and communication systems that serve most campus buildings.

Steam is produced at the central steam plant near the intersection of Lake Loudon Boulevard and Neyland Drive and distributed through underground mains. The steam plant includes one original coal-fired boiler which has been retrofitted to operate on natural gas, and four additional boilers which operate with natural gas as the primary fuel source. All boilers are capable of using fuel oil as a backup fuel source. One of the natural gas boilers is a gas turbine which produces electrical power and steam simultaneously. This turbine uses natural gas to power the electrical generator and produce steam using the waste heat generated by the turbine. The steam plant controls were recently upgraded as part of a 2014 renovation. The plant's steam generation capacity is approximately 417,500 pounds per hour (lbh), and the estimated peak plant steam load in 2020 was 200,000 pounds per hour (lbh).
















Steam and condensate piping mains are routed below grade in underground tunnels, with primary pathways located along Lake Loudon Boulevard, Volunteer Boulevard, Andy Holt Avenue, and Joe Johnson Drive.

Planned upcoming upgrades to the steam plant include replacement of the existing coal-fired boiler with a natural gas boiler as well as adding a new gas-fired turbine for additional combined heat and power (CHP) capability. UT Knoxville is also planning to complete a comprehensive inspection of existing steam piping using drone technology to identify leaks and other deficiencies.

Chilled water is produced throughout campus at a variety of regional and stand-alone chiller plants. Regional plants serve an average of 4 to 8 buildings each, with each plant containing multiple water-cooled centrifugal chillers and associated cooling towers. Most existing chillers have been installed or replaced within the past 10 to 15 years. Pumping arrangements include both primary-secondary and variable flow primary arrangements. UT Knoxville is interested in connecting plants together wherever practical to provide redundancy and resiliency in case of equipment failure.



CHILLER PLANT ZONES

- | | | |
|---|--|--|
|  UTIA |  Claxton Education |  Mossman |
|  Reese Hall |  Haslam Business |  Hesler Biology |
|  Haslam Music |  Stokely Management |  SERF |
|  Thompson-Boling Arena |  Student Union |  Zeanah Engineering |
|  Andy Holt |  Strong Hall |  Chiller Plant |



ELECTRICAL CIRCUITS

Main Substation

- | | |
|--|--|
| ■ CKT-1 | ■ CKT-7 |
| ■ CKT-3 | ■ CKT-8 |
| ■ CKT-4 | ■ CKT-9 |
| ■ CKT-5 | ■ CKT-10 |
| ■ CKT-6 | |

Laurel Avenue Substation

- | | |
|--|--|
| ■ LA-1 | ■ LA-4 |
| ■ LA-2 | ■ LA-7 |

Electrical service originates from two substations that are served by the local utility company, the Knoxville Utility Board (KUB). The substations provide 13.2 kV electrical service in a loop configuration to most buildings on campus via a system of underground ductbanks and medium voltage switches. The main substation is located near the intersection of Pat Head Summitt Street and Todd Helton Drive and has 10 medium voltage circuits that serve portions of campus, with one dedicated spare circuit. The second substation is located at the intersection of Laurel Avenue and 16th Street and has eight medium voltage circuits that serve campus, with two dedicated spare circuits. At this time, the substations have sufficient capacity to accommodate the expected growth on campus. However, the medium voltage electrical distribution system (circuiting arrangement, switching arrangement, equipment locations, etc.) will require modifications as existing buildings are demolished, new buildings are built, and areas of campus are expanded.

Energy

Compared to its peer institutions, UT Knoxville has a similar energy procurement profile. Very few institutions in the peer comparison purchase energy from renewable sources and what purchases are made are relatively minimal compared to overall institutional demand.

In 2018, the Student Environmental Initiatives Committee (SEIC) Facilities Fee was used to offset 100% of campus's electricity consumption through Renewable Energy Certificates (RECs), making UT Knoxville carbon neutral for scope 2 emissions in that year alone. In 2019, however,

the SEIC elected to use its Facilities Fee for energy efficiency and renewable energy projects on campus in lieu of purchasing RECs. It is advisable for UT Knoxville to continue prioritizing the investment of these dollars into energy efficiency projects that will reduce total campus energy demand ahead of offsetting demand through RECs.

Stormwater

UT Knoxville has strong existing stormwater management practices. The University already has a comprehensive set of policies, plans, and guidelines that require low-impact development including bioswales and rain gardens. The expansion of these practices, including underground cisterns, permeable paving, green roofs, and other strategies, is included in the Chapter 4 and has significant impacts to university sustainability efforts.

The University takes an active approach in monitoring erosion control and water quality on campus. The University monitors campus shoreline on the Tennessee River and identifies shoreline that needs stabilization. Furthermore, the University implements Second Creek and Third Creek monitoring programs to identify and prevent slope failures and siltation of stream channels. Existing impervious campus surfaces are identified, modified, and improved to drain to green infrastructure through University Best Management Practices. Finally, the University provides a variety of public outreach and education opportunities to learn about water quality through Adopt-A-Stream Cleanups, Water Quality Forums, Stormwater Awareness Training Sessions, and media/multimedia efforts.



GREEN INFRASTRUCTURE

- | | |
|--|--|
|  Bioswale |  Silva Cells |
|  Cistern |  Rain Gardens |
|  Permeable Pavers |  Green Roof |



▲ *UT Research Park at Cherokee Farm*

Outlying Parcels

Several properties near the contiguous Knoxville campus house support functions of the campus. These properties can serve to concentrate key academic activities such as research, or relocate support services and materials that do not require a location within the campus core, or benefit from an off-campus location, thus prioritizing the use of core campus space for students and academic functions.

UT RESEARCH PARK AT CHEROKEE FARM

UT Research Park at Cherokee Farm, located across the Tennessee River and adjacent to Alcoa Highway, is envisioned to be a premier research and technology campus leveraging partnerships with industry. To the south is the Mack and Jonnie Day Golf Practice facility which occupies approximately 40 acres. A natural buffer between the river and development parcels preserves archaeological assets and is accessible by the Knox Blount Greenway. To the east across Alcoa Highway is the UTIA College of Veterinary Medicine and the East TN AgResearch and Education Center – Joseph E. Johnson Animal Research and Teaching Unit (JARTU) where research is conducted. Also adjacent to these properties is the University of Tennessee Medical Center creating collaborative opportunities that are being realized through the new Orthopedic medical and research facility at the UT Research Park.



 RecSports Field Complex

MIDDLEBROOK PIKE PROPERTY

Located approximately five miles west of campus, the Middlebrook Pike property encompasses roughly 3.5 acres. The primary building currently on the site is a two-story office complex with a single-story warehouse occupied by the Records Management Office, research labs and academic offices for Archeology and Facilities Services. An additional 21,000 square foot single-story storage facility for rare and delicate library materials is planned.

CONCORD PROPERTY

The Concord Property located two miles from campus will consolidate campus support functions including fleet management, public safety, academic storage, and facilities services.

RECSORTS FIELD COMPLEX AT SUTHERLAND

A 38-acre parcel off Sutherland Avenue houses the RecSports Field Complex. Consisting of a variety of recreation fields and supporting maintenance buildings, this property supports university intramural and club sports. The complex is accessible via the Knoxville Greenway providing an important link to campus.

Sustainability

The University of Tennessee Knoxville has a long history of engaging in sustainable practices and development. Chancellor Crabtree signed the American College and University Presidents' Climate Commitment on behalf of the University in 2007 at which time the University also commissioned its first Climate Action Plan to begin addressing University operations that generate greenhouse gas emissions.

The University's commitment to accountability and transparency in its sustainability endeavors took a strong step forward in 2011 when the University published its first Sustainability Tracking, Assessment & Rating System (STARS) report to the Association for the Advancement of Sustainability in Higher Education (AASHE). STARS is a self-reported data sharing platform that supports colleges and universities in reporting how their institution advances sustainability in the areas of Academics, Engagement, Operations, Planning & Administration, and Innovation & Leadership. Depending on the number of points achieved, an institution is given the designation of Reporter, Bronze, Silver, or Platinum. UT Knoxville earned a Silver rating on its 2011 STARS submission.

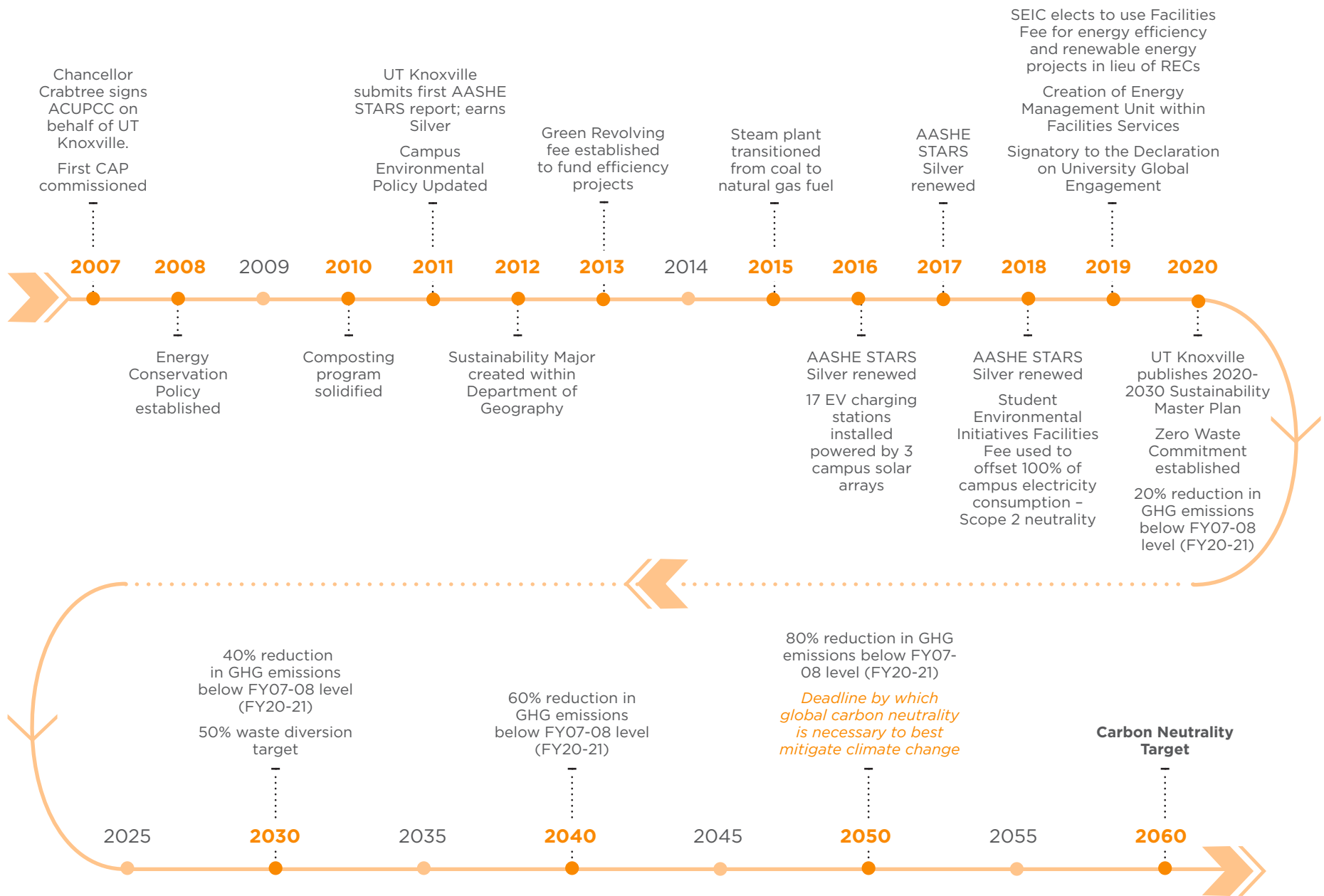
The next decade saw substantial evolution in campus sustainability including:

- The creation of a sustainability major within the Department of Geography;
- The establishment of a Green Revolving Fund to finance energy and water efficiency projects;
- The transition from coal to natural gas fuel at the University's steam plant;
- The installation of 17 electric vehicle (EV) charging stations;
- The installation of three on-campus solar arrays linked to academic endeavors;
- Continuous maintenance of the University's AASHE STARS Silver rating.

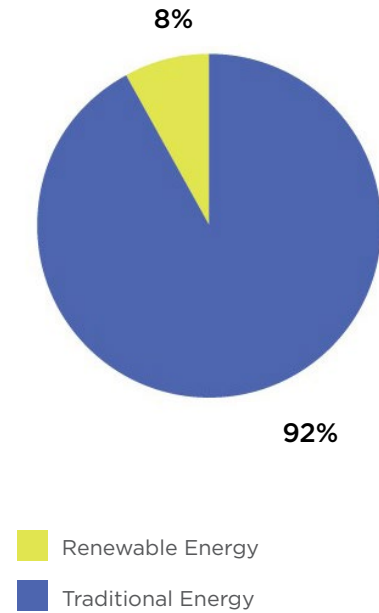
In 2020, UT Knoxville published its 2020-2030 Sustainability Master Plan which establishes sustainability goals in five areas:

- Energy
- Transportation
- Waste
- Land + Water Use
- Engagement

Among the most critical of UT Knoxville's goals are its commitment to achieve carbon neutrality by 2061 and zero waste to landfill as soon as possible.



UT KNOXVILLE ENERGY SOURCES



**UT Knoxville's STARS reporting year happens to include substantial REC purchases which is not an enduring practice of the institution.*

CARBON NEUTRALITY

As part of the master plan process, Ayers Saint Gross completed a sustainability-focused peer benchmarking exercise that compared UT Knoxville's sustainability endeavors amongst a number of its peer institutions, a meaningful exercise given that a 2022 Princeton Review study indicated 74% of college applicants say a college's environmental commitment affects their decision of where to attend. The results of these findings are provided as a supplemental document.

Compared to many of its peer institutions, the University of Tennessee, Knoxville has established a longer time horizon on which to achieve carbon neutrality.

This is significant as the United Nations' Intergovernmental Panel on Climate Change has indicated we must collectively achieve carbon neutrality as a global civilization by 2050 in order to stave off the most significant impacts of a changing climate. UT Knoxville's current carbon neutrality target is 2061, beyond the global 2050 target, and significantly beyond the targets established by many peer institutions. The master plan recommends that the University accelerate progress toward carbon neutrality to the greatest extent practical.



FACILITIES CONDITIONS

Physical Facilities Condition Survey

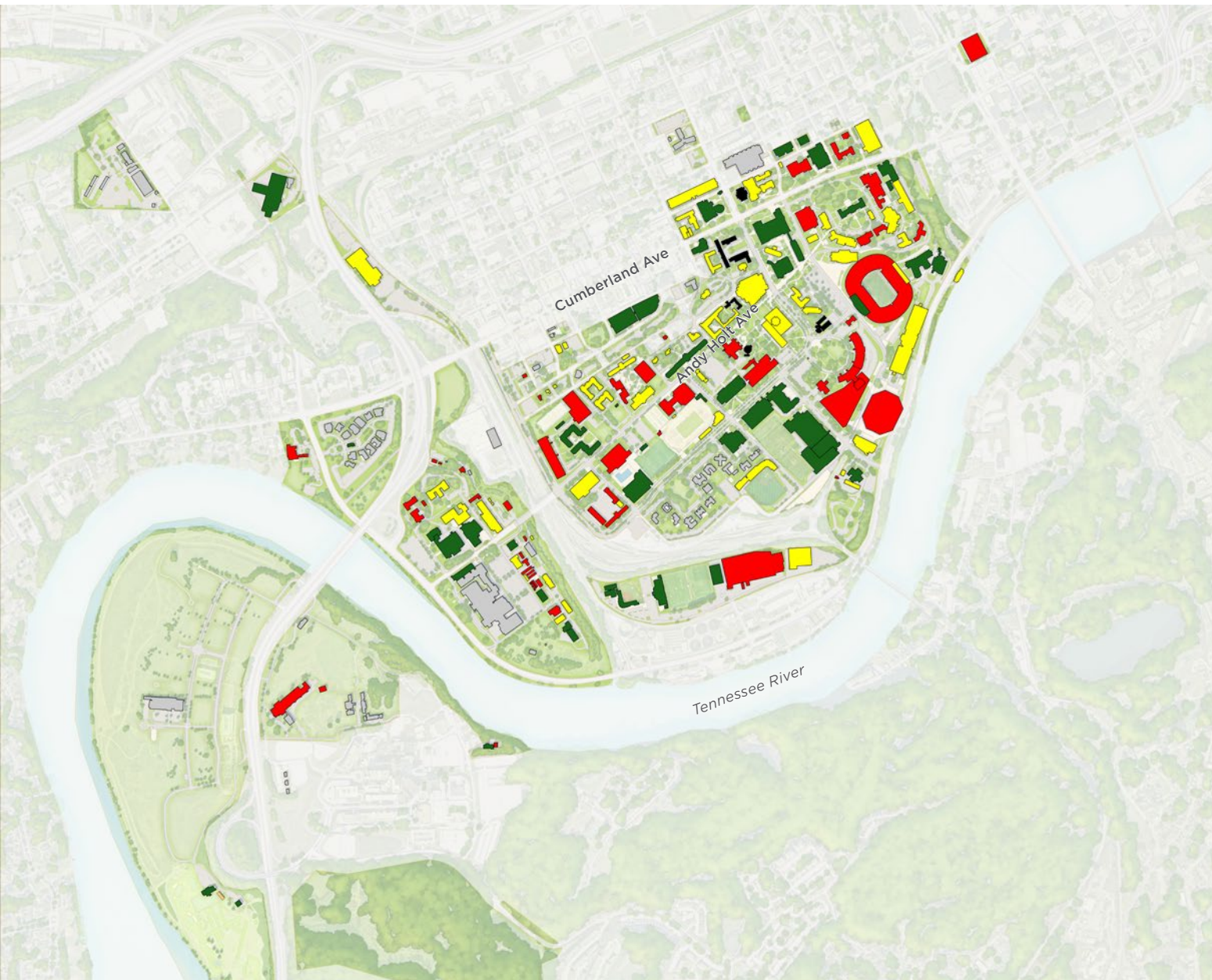
Over the course of the last year, the University contracted with Bureau Veritas to survey the physical condition of campus buildings. This assessment completed for each building is a comprehensive evaluation of the current condition of the building and building systems. The evaluation included mechanical, electrical, plumbing and fire suppression as well as identifying key repairs and upgrades required and forecasted expenditures. While the assessments were completed for most academic buildings and residence halls, the survey did not include Greek student housing, support facilities, buildings previously slated for demolition, and newly constructed buildings.

The building assessment coalesced into a Facility Condition Index (FCI) - the ratio of the cost of current needs divided by the current replacement value of the building. The FCI is extrapolated into a 3-, 5- and 10-year

time horizon to project long-term investments.

For the purposes of the master plan, the goal was to identify the condition of key buildings to understand trade-offs of renovation versus replacement. Based on the initial FCA reports, the UT Knoxville facilities team streamlined the assessments by classifying them as Good, Average, and Poor based on their knowledge of systems condition and maintenance and repair needs.

At the start of the master plan process, several building projects were in various stages of planning, and seven buildings were slated for demolition. The Facility Condition Assessments identified 4.2M GSF of space, or 25% of space overall is identified as in poor condition. On-going maintenance and renovation of existing facilities is paramount supporting the campus and it's mission.



FACILITY CONDITION

- Good
- Average
- Poor
- Planned Demolition
- N/A - No Condition Assessment





3

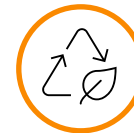
Master Plan Drivers

FOUNDATIONAL COMPONENTS

Multiple strategic drivers shape the projects and priorities of the master plan. The University's Strategic Vision is the foundation. The existing conditions analysis and campus engagement also helped to identify the physical drivers for the plan. They include:



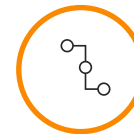
Improve gateways, edges, access, and first impression



Ensure a sustainable strategy for parking



Create a safe and accessible pedestrian-friendly campus



Creater stronger campus connections



Improve connections to the community, downtown, and the river

The programmatic drivers are based on the space needs assessment, enrollment growth, and addressing the quality and condition of existing facilities. This chapter outlines the enrollment growth projections and associated space needs based on Tennessee Higher Education Commission (THEC) guidelines and industry best practices. The key programs and space types driving additional space needs include:

- Student housing demand (discussed in Chapter 4)
- Collaboration, study, and recreation space
- STEM instructional labs and maker spaces
- Haslam College of Business expansion
- Research expenditure goals

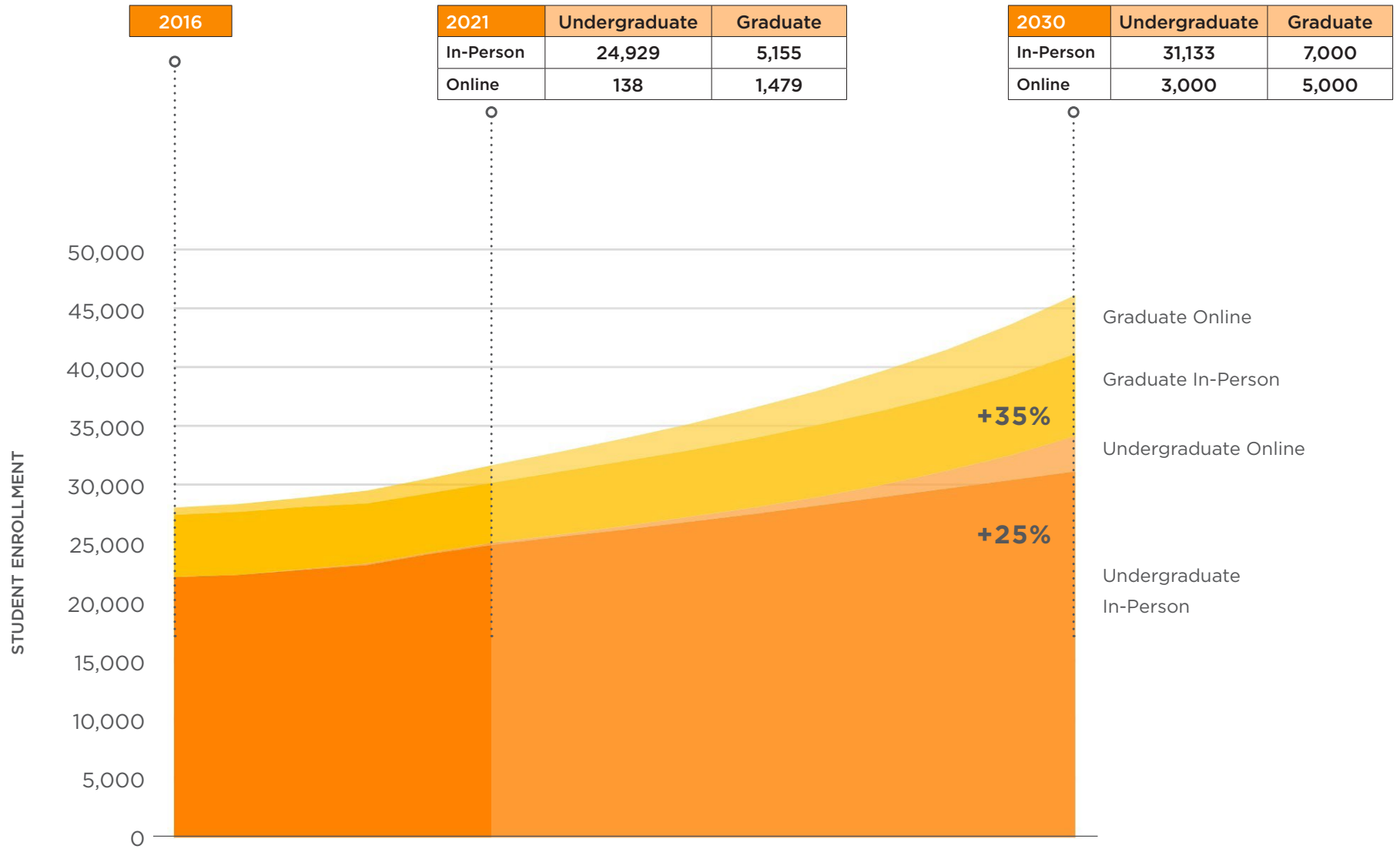
The strategic plan, physical drivers, and programmatic drivers come together to inform the Planning Principles for the plan. These principles guide near- and long-term decisions for the physical campus and serve as design guidelines for the campus master plan. Together, these components serve as the foundation and key drivers for the master plan recommendations.

ENROLLMENT



Fall term 2021 enrollment was used as the baseline for the master plan with 25,067 undergraduate students and 6,634 graduate students for a total of 31,701 traditional and online students. The University has set a target of 46,000 traditional and online students by 2030, an increase of approximately 14,500 students from Fall 2021. (Current census for Fall 2022 is 33,805.) Projections for Fall 2030 include increases of 35% in-person graduate and 25% in-person undergraduate growth and significant growth across online graduate and undergraduate students.

TEN YEAR ENROLLMENT PROJECTIONS

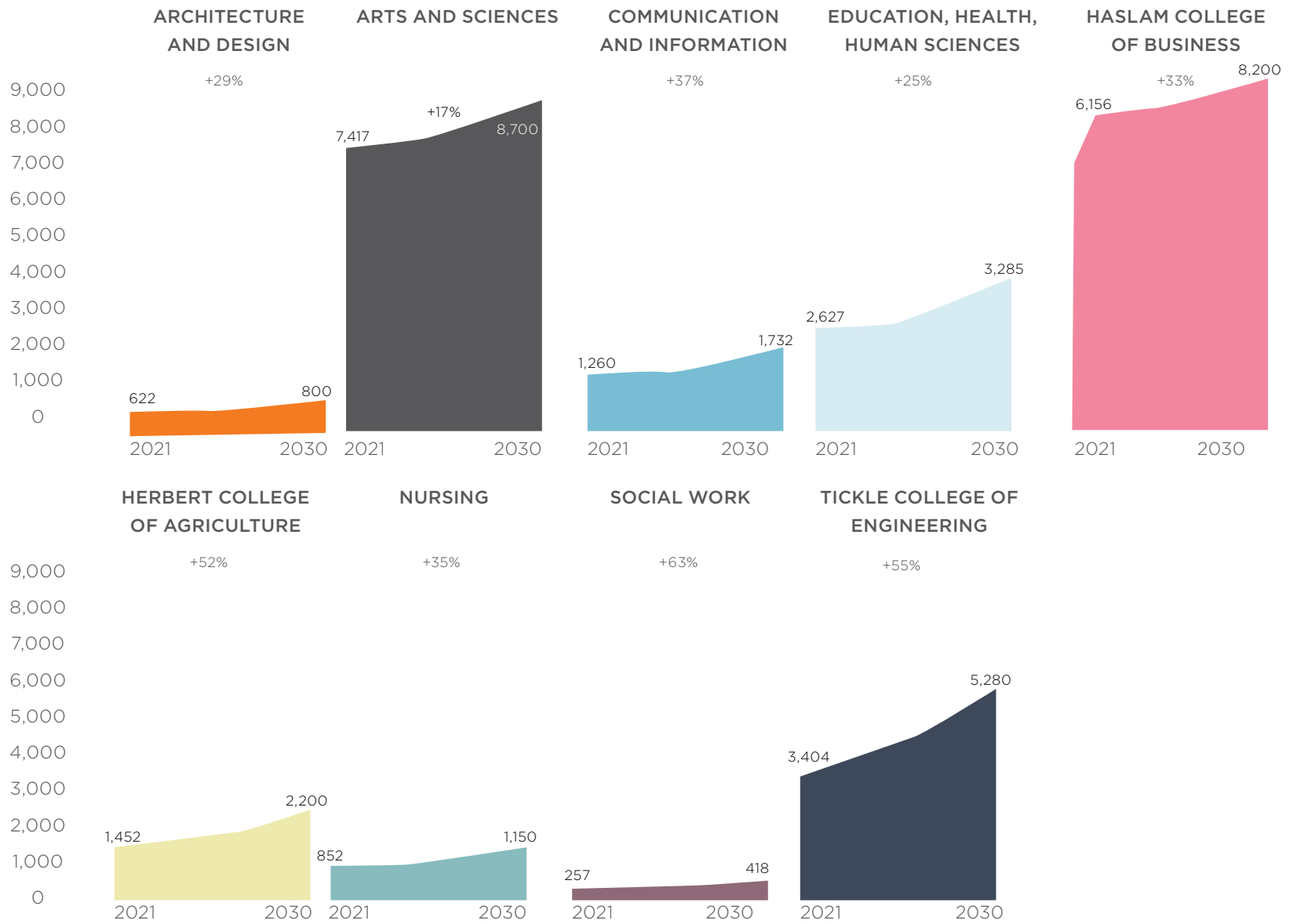


Enrollment projections are based on enrollment trends from the past five years at the university, college, and department levels. Additional considerations for where growth will occur include:

- Growth in multi-disciplinary units and programs between the College of Arts and Sciences, HCB, and TCE in computing
- Tennessee industry demand for employment within healthcare, engineering, data, operations, and systems engineering
- Opening of Zeanah Engineering Complex spurring increased TCE enrollments
- Growth in agricultural engineering in the Herbert College of Agriculture supported by the Tickle College of Engineering

Growth in enrollment has an impact on the number of faculty and staff as well. Considerations for student faculty ratios as well as increased research expenditure goals require an increase in faculty and staff by 2030. Using the 2020 study by Deloitte paired with additional meetings and input from key stakeholders, the master plan assumes a 46 percent increase in tenure-track faculty and 38 percent increase in non-tenured faculty and other staff.

ENROLLMENT PROJECTIONS BY COLLEGE



SPACE NEEDS ASSESSMENT

The space needs assessment is intended to serve as a tool to support decision-making and the development of physical solutions and strategies. The assessment quantifies the amount of space UT Knoxville currently uses, then calculates ideal quantities of space needed to support institutional goals and initiatives for short-term and long-range planning. The ideal quantities are compared to existing space quantities to identify areas of need and surpluses.

The Tennessee Higher Education Commission (THEC) is the coordinating board which oversees the efforts of higher education institutions in the state and has guidelines for master planning at the institution level. THEC has established space metrics that apply to educational and general space on campus (E&G space) within these seven space use categories: classrooms, teaching laboratory and studio, open laboratory and studio, research lab, office, library and study space, and physical education and recreation space. Where THEC guidelines do not apply, Ayers Saint Gross provided space utilization metrics based on our experience in space analytics and instructional space design, industry best

practices, and peer university benchmarking. The space quantities recommended in the assessment are intended to be used to determine the magnitude and priority of need for campus space planning. As capital projects and plans are developed from this analysis, a lower or higher standard might be used to conduct a detailed program analysis.

The assessment process used institutional data, stakeholder input, and observations of the physical campus to interpret the opportunities and challenges related to UT Knoxville's physical space. The University provided several datasets and an extensive amount of institutional information that, when compiled, created the foundation of the space analysis. Student enrollment, the employee roster, course scheduling information, and the University's building and room inventories served as the primary datasets. Fall 2021 served as the baseline for all data and future projections reflect the 2030 enrollment assumptions.

**Knoxville + UTIA, Excludes Nashville*

Existing Space

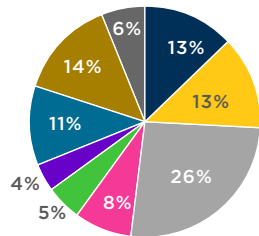
The University of Tennessee Knoxville encompasses roughly 7.75M net assignable square feet (NASF) of space located at UTSI, Oak Ridge, and Knoxville. Reflecting the inclusion of the Herbert College of Agriculture, AgResearch and the College of Veterinary Medicine as part of the Knoxville Campus, space for UTIA has been incorporated in this analysis. Within the space needs assessment, 5.79M NASF of non-residential space was considered.

The following spaces/locations were not included in the analysis:

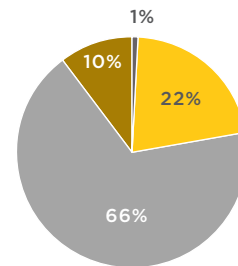
- Nashville
- UT Extension and UT AgResearch Centers
- Other cities/statewide campuses
- Barns and field stations
- Residence halls

Space was documented and evaluated within categories. All three locations were considered, but the focus of the space needs assessment was the Knoxville campus.

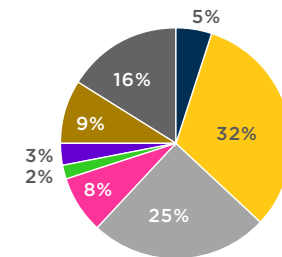
KNOXVILLE



OAK RIDGE



UTSI



	SPACE GROUP	NASF
	Instructional Space	745,700
	Research Space	738,600
	Office Space	1,433,900
	Library, Study, & Student Space	443,600
	Kinesiology & Recreation	265,700
	Dining Space	209,000
	Athletics	754,400
	All Other Non-Residential Space	265,700
	Physical Plant/Support Space	359,500
	TOTAL	5,571,200

	SPACE GROUP	NASF
	Instructional Space	524
	Research Space	16,927
	Office Space	54,160
	All Other Non-Residential Space	8,202
	Physical Plant/Support Space	1,747
	TOTAL	81,600

	SPACE GROUP	NASF
	Instructional Space	6,600
	Research Space	45,000
	Office Space	34,900
	Library, Study, & Student Space	12,100
	Kinesiology & Recreation	2,800
	Dining Space	4,700
	All Other Non-Residential Space	12,700
	Physical Plant/Support Space	22,400
	TOTAL	141,200

In the Fall 2021 term, the institutional total net assignable square feet of space at the Knoxville campus included in this assessment was 5.5M NASF. The baseline (Fall 2021) projections are compared against the existing space inventory (5.5M NASF), and the future scenario (Fall 2030) is compared against an existing and planned construction space inventory that incorporates the capital projects and resulting moves that were completed during the planning process or are underway. By comparing the projection to the future space inventory, the assessment can look beyond existing conditions to identify what needs and opportunities will remain beyond the projects in progress. Recently completed, existing, and planned construction projects include Zeanah Engineering Complex, College of Nursing Building, Energy and Environmental Science Research Building (EESRB), Vet Med Teaching and Learning Building, and recent conversions in the Walters Academic Building to bring space online. These projects add approximately 311,000 NASF to the existing inventory.

Space Needs Outcomes

For the Fall 2021 baseline, the space needs show the campus is in relative balance for overall space. The overage in areas like office space, however, masks the needs for research, instructional labs, student space, and support space. By 2030, there is an overall need for more space on campus, with some of the largest needs in STEM instructional labs and maker spaces, research space, and collaboration, study, and recreation space.

CLASSROOMS

The way students learn and are taught continues to evolve. While newer classrooms on UT Knoxville's campus accommodate this shift and provide flexibility, a large amount of the inventory has less than 20 NASF per student and does not accommodate active learning. The analysis shows that the overall classroom space is in relative balance per the THEC utilization targets although much of this existing inventory does not support the square footage (about 25-sq. ft. per student) that is needed for modern, campus-based student learning. While campus-hosted rooms are generally near appropriate usage targets, many classrooms outside of the classroom pool appear to be scheduled poorly per the data submitted to registrar. There is an opportunity to schedule more courses in the afternoons, should it be needed to absorb growth. Despite the overall number of classrooms being in balance, there are deficits in certain key classroom capacity ranges: classrooms with less than 20 seats and rooms seating between 51 to 60. Should enrollments grow to the 2030 projections, there will be a distinct need for additional campus-hosted classrooms per the THEC metrics, and to support the value gained from placing students in on-campus spaces supporting team- and group-based learning.

ACADEMIC, RESEARCH AND SUPPORT SPACE FINDINGS

Relative Balance Percentage Need Percentage Overage

ACADEMIC, RESEARCH, OFFICE SPACE	FALL 2021				FALL 2030			
	EXISTING	MODELED	DIFFERENCE	% CHANGE	EXISTING + PLANNED CONSTRUCTION	MODELED	DIFFERENCE	%
I. CLASSROOMS	360,700	344,100	16,600	5%	427,700	434,700	(7,000)	-2%
II. LAB / STUDIO	289,600	237,600	52,000	18%	336,500	312,900	23,600	7%
III. OPEN LAB	95,500	146,100	(50,600)	-53%	123,200	179,100	(55,900)	-45%
IV. RESEARCH	598,500	646,800	(48,300)	-8%	654,300	980,700	(326,400)	-50%
V. OFFICE	1,434,000	1,062,490	371,500	26%	1,492,100	1,486,160	5,940	0%
VI. LIBRARY	350,700	281,400	69,300	20%	350,400	291,600	58,800	17%
VII. PHYSICAL ED	265,700	322,100	(56,400)	-21%	265,700	394,900	(129,200)	-49%
OTHER CAMPUS SPACE	EXISTING	MODELED	DIFFERENCE	% CHANGE	EXISTING + PLANNED CONSTRUCTION	MODELED	DIFFERENCE	%
Assembly, Exhibit & Event Space	183,500	214,400	(30,900)	-17%	183,600	262,900	(79,300)	-43%
Student-Centered Space	93,000	131,800	(38,800)	-42%	117,300	161,500	(44,200)	-38%
Dining Space	209,000	175,700	33,300	16%	210,200	215,400	(5,200)	-2%
Intercollegiate Athletics	620,700	620,700	0	0%	620,700	820,000	(199,300)	-32%
Student Health Care Facilities	14,800	15,900	(1,100)	-7%	14,800	19,300	(4,500)	-30%
Other Academic Space	135,300	146,400	(11,100)	-8%	137,600	193,200	(55,600)	-40%
Other Administrative Space	314,900	313,700	1,200	0%	314,900	359,000	(44,100)	-14%
Vivaria + Greenhouse	140,100	160,000	(19,900)	-14%	140,100	250,000	(109,900)	-78%
Clinic Space	30,000	30,000	0	0%	30,000	30,000	0	0%
Veterinary Clinic	75,800	75,800	0	0%	75,800	75,800	0	0%
Physical Plant	359,500	384,000	(24,500)	-7%	361,400	390,100	(28,700)	-8%
INSTITUTION TOTAL	5,571,200	5,308,990	262,200	4%	5,856,300	6,857,260	(1,000,960)	-17%

To increase accessibility, inclusion, and belonging; better align with modern pedagogy; and allow for future flexibility, UT Knoxville should consider rightsizing the existing classrooms to provide 20-30 NASF per student. Right-sized rooms will allow for increased utilization and better alignment of the number seats in the room with the course section size (the overall seat fill rate). Utilization targets used at peer institutions are typically 35 weekly room hours and a 70-85% seat fill rate. Including more classrooms in the 'campus-hosted' pool will also help increase the overall utilization of space and resources. A deeper analysis of classroom space is recommended to inform the programming and needs for future buildings.

INSTRUCTIONAL LABS

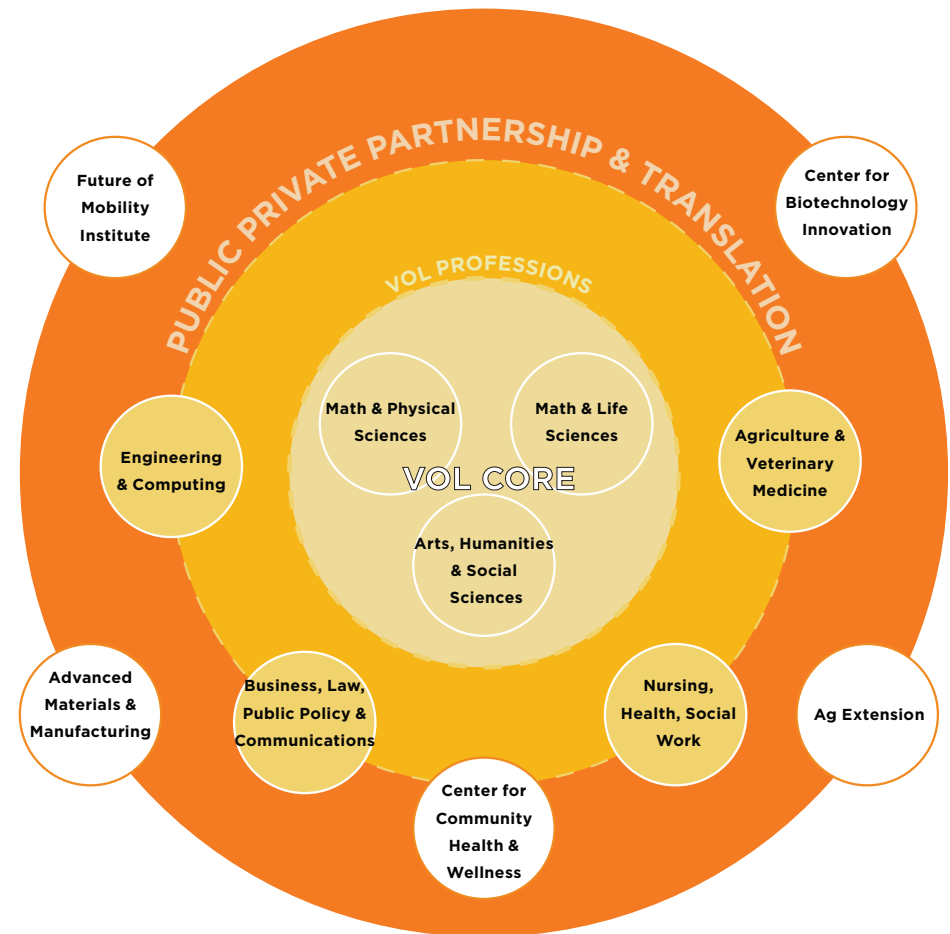
Overall, there is a surplus of existing space classified as lab/studio in the space inventory. However, some of these spaces are currently unscheduled and could be recategorized as open lab or research lab if the space is not intended for credit-bearing instruction. The gaps in utilization data are the driving factor in the surplus of space. This outcome likely does not reflect the true need for existing or future lab/studio space. Open lab space has a large deficit when compared to THEC space guidelines, which may be partially met by the current overage of lab/studio space. Overall, the NASF/seat in labs is appropriate but the quality and consistency between disciplines varies by building. The lack of sufficient instructional laboratory spaces in the STEM programs is and will constrain enrollment growth, and hence, shows the greatest need for increased instructional labs and maker spaces.

LIBRARY AND STUDY/COLLABORATION SPACE

Learning happens everywhere on campus. The library is no longer just a place for books but is a hub for learning, connecting, studying, and research. Many guidelines do not reflect the current way a library is used and operated. The library stack space has a small surplus for the baseline space and future scenario. The projected decreases in stack requirements will allow for an increase in study space allocation within the library. However, the THEC guidelines for study stations do not necessarily align with the goals of creating a culture of collaboration and distributed study space across the UT Knoxville campus that effectively supports place-based student learning. The need for additional study/collaboration stations and space for non-residential students on campus is especially important to create an inclusive campus environment where each student feels equally valued with respect to access to space and resources. As the nature of learning and studying evolves, there is a decreasing distinction between formal study space, informal study space, and student-centered space. THEC does not have a metric for student-centered space. However, best-practice benchmarks for universities across the country are between four and five NASF per student FTE. Considering existing space on campus and current planned projects, there is need for an additional 40,000-50,000 NASF (between approximately 130,000-160,000 total NASF) of distributed student-centered space (non-residential student lounges, student activity rooms, student-oriented meeting rooms, collaboration areas, etc.). An additional metric to consider is providing 3-5 NASF/seat in instructional buildings to accommodate study and collaboration outside the classroom.

RESEARCH SPACE

UT Knoxville featured a total of \$244M of research expenditures in FY21. Based on THEC research space guidelines (range of NASF/\$1M Expenditures by discipline), there is a deficit of 48,000 NASF in the baseline scenario. The modeled increases in tenure/tenure-track (T/TT) faculty with commensurate increases in research expenditures will have particularly significant impacts on the needs for research space in the future. In addition to the growth in T/TT faculty conducting research, the strategic goals of the institution are pursuing a doubling of research expenditures to \$500M per year before 2030. THEC guidelines result in a need for an increase of approximately 200,000 NASF of research space to support this additional research activity. The largest needs are in engineering and agriculture. The social, behavioral, and human subject research disciplines also have needs and do not have quality, easily accessible space on campus today. To support the University's research goals, facilities with flexible labs and ample support space are required to promote interdisciplinary collaboration and shifts in grants and team sizes. There is also a need for more animal research space (vivarium) across disciplines.



▲ Conceptual diagram of research areas. As research focuses beyond the Vol Core, it becomes for translational and interdisciplinary and is more suitable for interdisciplinary buildings and building sites outside the campus core.

OFFICE SPACE

Despite a modeled surplus of office space, most academic departments are in approximate balance between number of seats and faculty/staff needing office stations. Administrative departments appear to show some excess station availability. Office size varies across buildings and where lower density configurations exist, efficiency is impacted. However, improving these inefficiencies in offices space is difficult to achieve due to the minimal gains when compared to the cost required to downsize individual offices. Higher utilization of office space could be achieved by aligning space with hybrid work policies.

There is a deficit of collaboration and conference room space in both the existing space and in the 2030 projection. While there is an apparent surplus of existing office space in the baseline scenario, the 2030 modeled space needs suggest additional office seats are needed in all academic disciplines with a pronounced need in the College of Arts and Sciences.

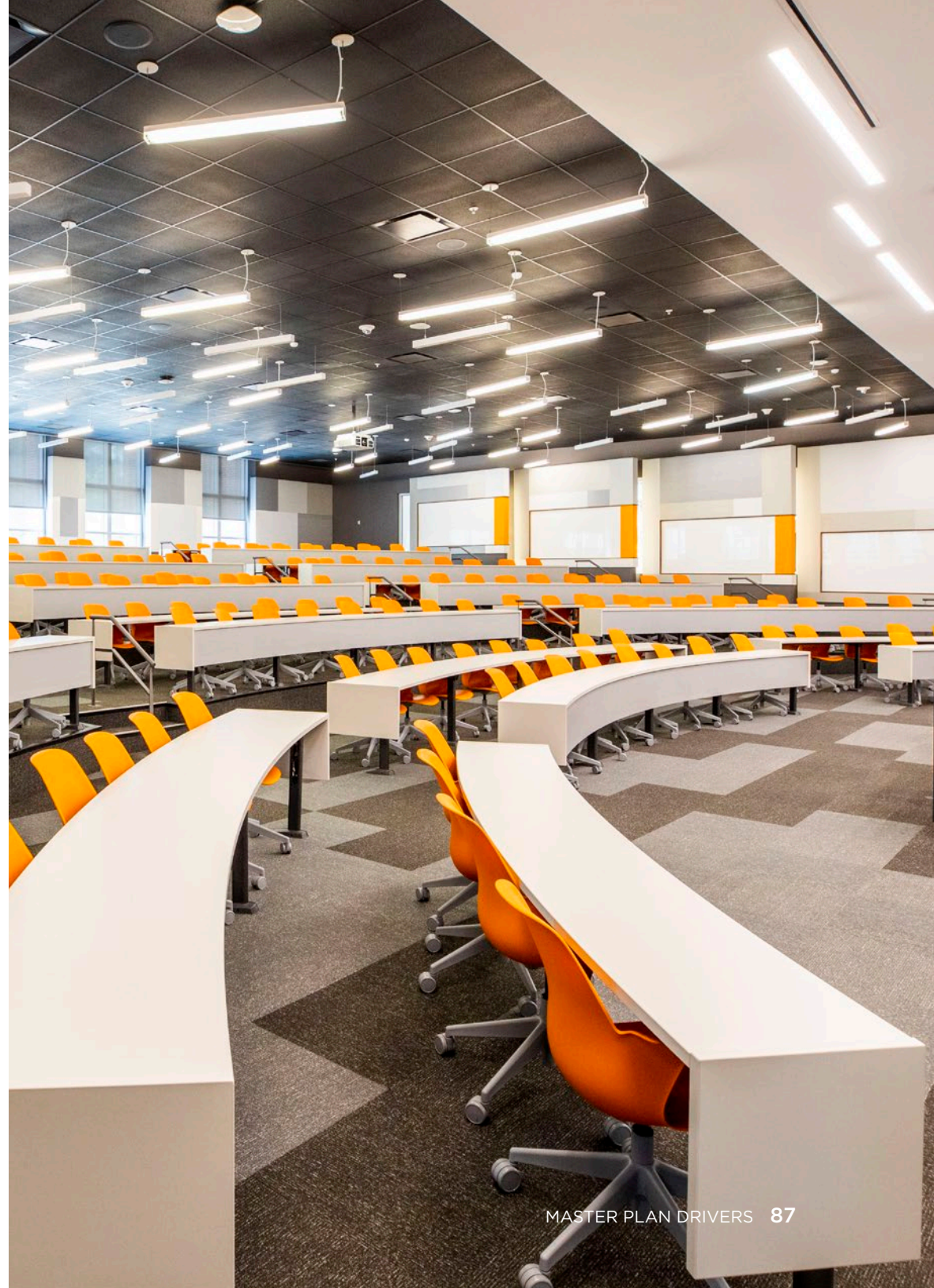
Workplace space accounts for the greatest amount of space on campus. Renovating and rightsizing oversized offices in older buildings is typically not practical nor does it gain efficiency unless there is a large footprint with a major renovation of the floor. The greatest impact

for the University will be in flexible work policies and space guidelines that reflect how work and collaboration is evolving. The ways in which people work have changed – technology and innovation have enabled us to rethink how we optimize productivity and job satisfaction. As such, the ways in which the physical workplace can best support workers have also changed. Employees with flexible work arrangements may have lesser need for dedicated private offices and greater need for spaces that support community building and collaboration. They may be good candidates for a shared workspace model, an alternative office environment that offers a greater mix of spaces for a diversity of workstyles, tasks, and interactions. In an open or shared workspace model, the physical space is intended to facilitate customer (student) support and foster interaction between colleagues. Most work occurs in shared space, yet enclosed offices can still be available for focus-oriented tasks and sensitive conversations. Far from a one-size-fits-all approach, the success of a more flexible and shared office environment resides in providing ample meeting, conference, and private spaces for calls and focused work. New construction projects provide the greatest opportunity to apply new workplace guidelines and provide flexible space that supports evolving policy changes.

ADDITIONAL NEEDS

As enrollment increases, so will the need for staff and space to support the physical, emotional, personal, and academic needs of students. Indoor and outdoor recreation, clinic, dining, tutoring, and advising are all needed to support a growing student body. Space that accommodates the University and external community, including athletics, assembly, exhibit, and event spaces, also need to be considered. The physical plant should be sized to support the campus facilities and infrastructure.

The campus-wide assessment highlights the priority areas of need from a metric perspective, but it does not always reflect the lived experience. Outdated facilities limit programs and impact the student experience. This often results in a perceived need for more space. It is equally important to address the quality, condition, and functionality of buildings to address the space needs and meet the strategic goals of the University.



PLANNING PRINCIPLES AND DESIGN GUIDELINES



The planning principles are interconnected strategic goals that help guide the master plan decision-making process and provide an important standard by which the plan and its implementation can be assessed. Five planning principles emerged from a large cross-section of stakeholder engagement sessions to create a vision for UT Knoxville's campus that will support its students, faculty, staff, alumni and the larger Knoxville and Tennessee community. These planning principles reflect the strategic plan goals and campus assessment findings and will serve as a guidepost for future development and continual future planning. Each principle is supported by a series of strategies. Recommendations in the master plan and future project should support at least one, but ideally multiple principles and strategies.



Connectivity

Support the land-grant mission by providing strong internal and external campus connections.

- Clarify the arrival experience with improved signage, wayfinding, gateways, and streetscapes that communicate the UT Knoxville identity and ensure visitor destinations are easily accessible and identifiable.
- Leverage the arts, athletics, clinics, academic, and outreach programs to provide transformational enhancements to social, cultural, health, and economic prosperity in Knoxville and across Tennessee.
- Connect UT Knoxville resources with partners to address community-identified needs and opportunities.
- Create a healthy and active campus supported by consistent and reliable transit.
- Promote personal and pedestrian safety through clear sightlines and distinct intersections and crosswalks.
- Improve mobility between all areas of campus by enhancing dedicated pedestrian and bike routes that mitigate topography and distance.

Sustainability and Natural Systems

Prioritize resource conservation and environmental practices that promote an equitable campus and mitigate the social impacts of climate change.

- Communicate and visualize campuswide resource conservation and environmental stewardship efforts.
- Identify iconic places on campus that should be celebrated and preserved.
- Increase physical and visual connection to the river, creeks, and greenway for recreation, education, and research.
- Design a cohesive network of landscapes throughout campus that welcomes and accommodates a broad range of experiences while integrating green infrastructure.
- Determine stormwater management strategies and locations for campus.
- Provide a mobility system that prioritizes low-carbon transportation.
- Renovate and repurpose buildings and sites for their highest and best use.
- Build new, resource-efficient space to meet program needs when existing space cannot satisfy needs.





Volunteer Experience

Create a welcoming, vibrant and mixed-use campus setting.

- Ensure the physical campus results in a sense of pride from the UT Knoxville and Knoxville community.
- Locate formal and informal student spaces throughout campus to support creativity, identity, interdisciplinary collaboration, and studying.
- Modernize student support spaces, student commons, and wellness facilities to ensure student success and well-being.
- Provide high-quality and appropriate teaching, learning, research, study, and living spaces that accommodate modern instructional pedagogies and participation in research, while supporting living and learning goals.
- Prioritize flexible, accessible, welcoming, and inclusive spaces that support a diverse campus population.

Interdisciplinarity & Research

Create interdisciplinary communities supported by core facilities that catalyze innovation and leverage partnerships.

- Ensure programs and facilities support innovation, collaboration, and state-of-the-art education and research outside of college or departmental boundaries.
- Maximize the impact of our researchers, scholars, and creatives by enhancing existing research infrastructure support (core facilities, building systems, utility infrastructure).
- Re-envision office spaces to enhance collaboration both across campus and between campus and external partners.
- Provide stronger physical connections between research, private industry, and clinical programs to support innovation and growth.
- Provide spaces that support entrepreneurship, attract partnerships, and contribute to a sustainable future.





Growth

Support growth to fulfill the UT Knoxville mission and transform the campus.

- Establish a flexible and nimble planning framework that can adapt to future needs and guide the development of the campus.
- Prioritize infill development opportunities and projects to densify campus and fulfill multiple research, academic, and facility goals.
- Leverage UT Research Park at Cherokee Farm as a centerpiece for innovation and collaboration through interdisciplinary facilities and inclusive economic development strategies.
- Increase partnerships in downtown Knoxville and other community sites to support student engagement, expand research, and meet the needs of Tennesseans.
- Evaluate leasing and hybrid strategies to accommodate or reduce space needs.





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Master Plan Framework



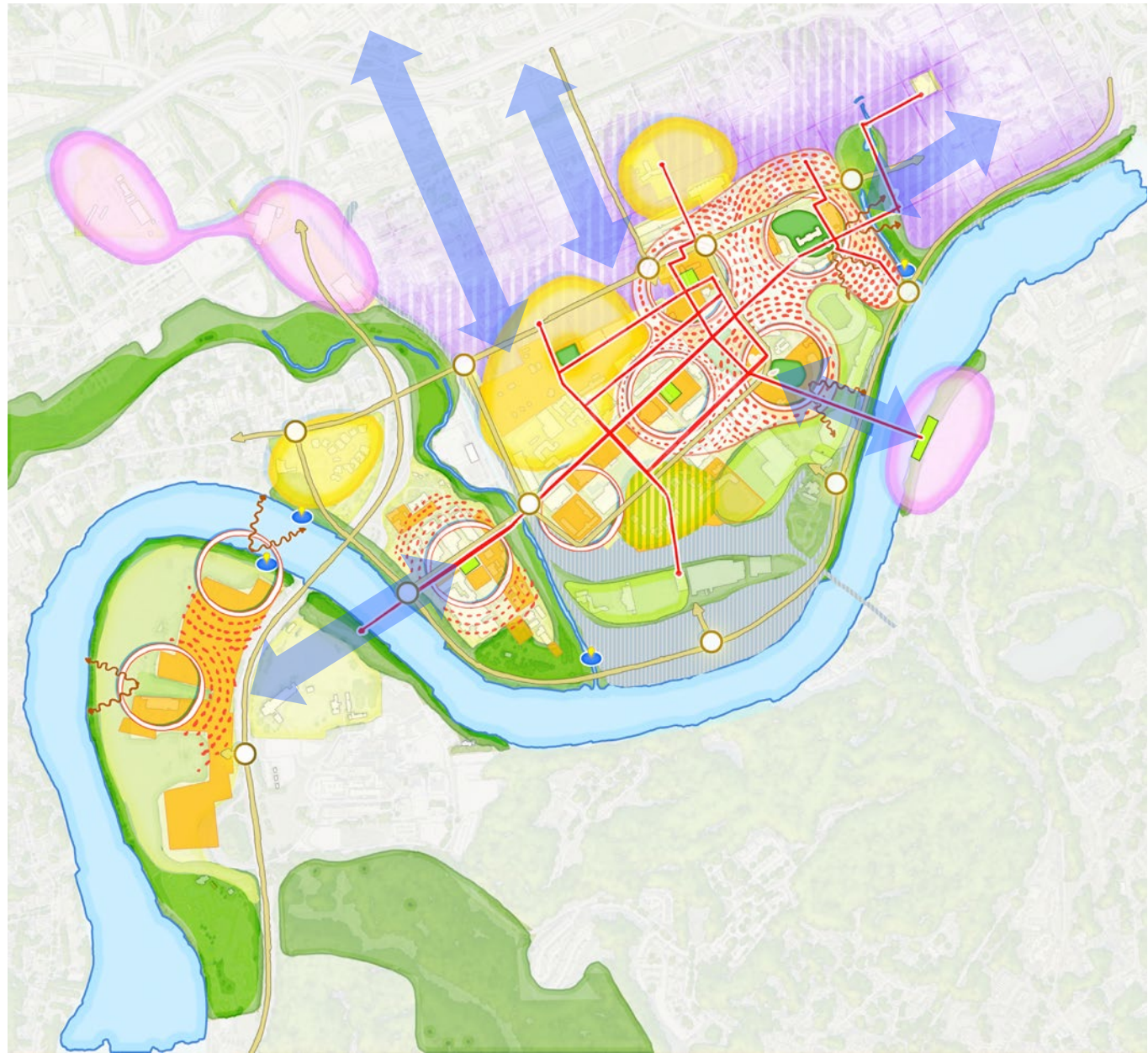
CONCEPT PLAN

The Concept Plan is an illustrative diagram identifying key issues that the master plan seeks to address. The graphic depiction of the planning goals reveals layers of inter-connected opportunities, and their relation to each other, and identifies areas to test various development scenarios throughout the planning process. The Knoxville Campus has the opportunity to better engage with the city and the Tennessee River. Identifying areas for access, engagement, and partnership are important for supporting the land-grant mission and planning for growth. Inside the campus boundary, opportunity sites for development exist where there is low density or activity and clusters of buildings in poor condition. Establishing

interdisciplinary nodes in these opportunity areas creates hubs for collaboration, mixing of uses, and greater campus legibility and vibrancy. Redevelopment should be coordinated with existing and potential open spaces to maximize the utilization of the campus core while preserving and enhancing its defining characteristics. The concept plan recognizes the importance of pedestrian connectivity and identifies key pedestrian spines and gateways that, combined with realizing key development sites, will ensure a cohesive, connected, and more sustainable campus in the future.

CONCEPT PLAN

- Green Infrastructure
- Athletics
- Major Open Space
- Utility Infrastructure
- Campus Property
- River Engagement Opportunity
- City Collaboration Area
- Opportunity Site
- Housing / Student Life cluster
- Housing/Athletics cluster
- Mixed use cluster
- Library and Student Center
- Interdisciplinary Opportunity Area
- Interdisciplinary area of influence
- Viewshed opportunity
- Major Pedestrian Spine
- Major Gateway Road
- Gateway
- Major Partnership opportunity





FRAMEWORK

The master plan provides a long-term vision for the physical campus identifying renovation, new development, open space, and infrastructure projects. In the 10-year horizon, the plan identifies 2.9M GSF of renewal through major renovation and demolition that addresses more than half of the poor condition space on campus. 3.3M GSF of non-residential space is planned to support modern instruction, STEM and research growth, and the overall student experience. This new development provides infill throughout campus strengthening key adjacencies like the arts and humanities. Additionally, the planning accommodates 1M GSF of housing to meet immediate needs for students.

The master plan recommendations are organized around three key strategies that support the overall Volunteer experience and the Planning Principles for the master plan – establishing interdisciplinary hubs, expanding student life and athletic clusters, and strengthening campus connections.

10 YEAR IMPLEMENTATION

-  New Construction
-  Major Renovation



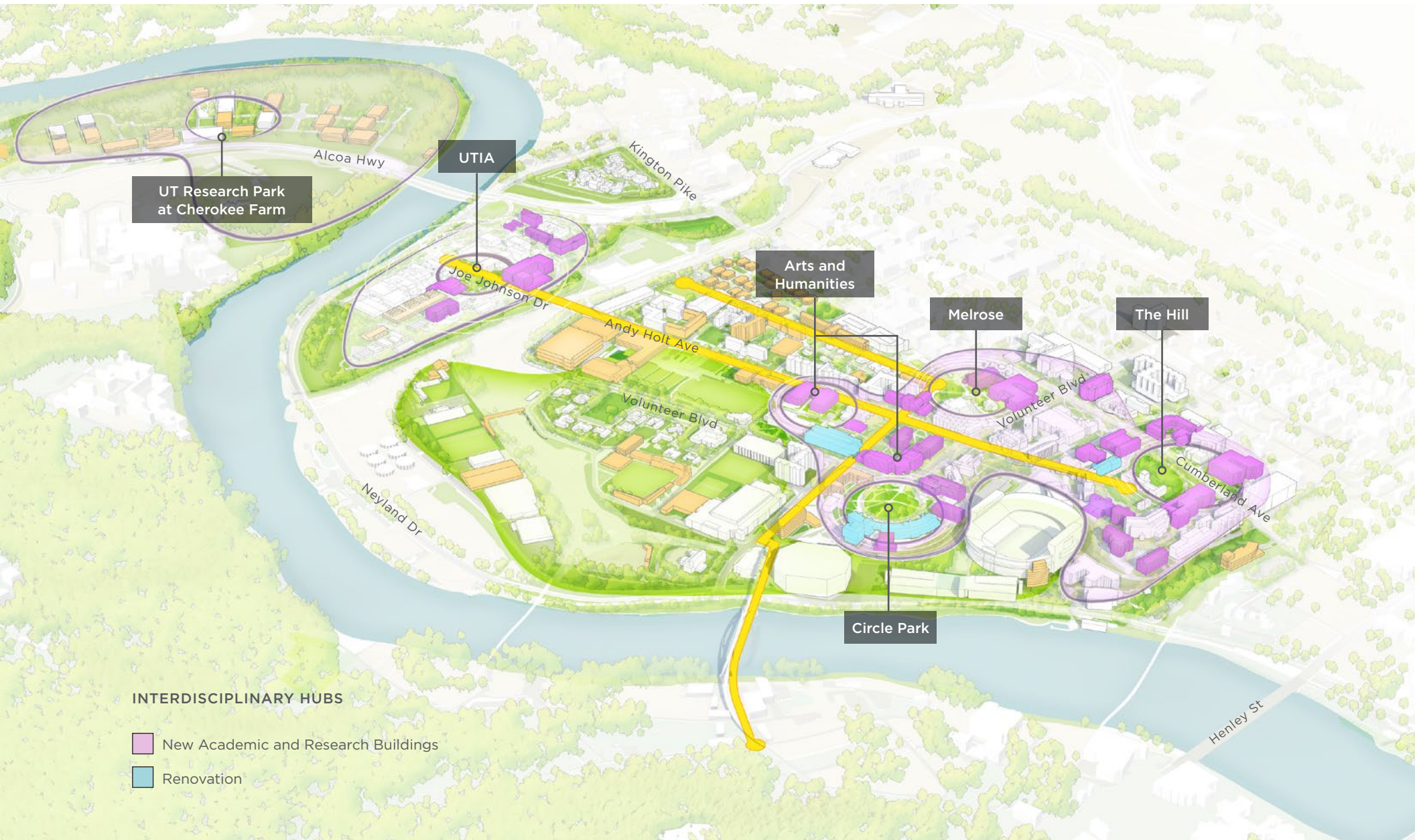


Interdisciplinary Hubs

Interdisciplinary learning and research communities emerge as shared, centralized facilities and hubs that bring together faculty, students, and researchers from different disciplines to collaborate in areas of shared interest. Interdisciplinary hubs are identified where existing campus adjacencies can be strengthened by aligning appropriate disciplines and research infrastructure. At The Hill, the science, engineering, and technology facilities are revitalized providing additional research capacity through the renovation and expansion of Dabney-Buehler. The redevelopment of the Jessie Harris site provides the opportunity for interdisciplinary research focused on social, behavioral, and human subject research creating a connection between STEM research on The Hill and existing buildings and proposed research along Cumberland Ave. Similarly, the redevelopment of Walters Academic Building site provides an opportunity for new, modern classrooms and teaching labs that will serve the entire student population.

The building and site design will allow for greater connectivity between The Hill and the Student Union. The Haslam College of Business expansion and replacement of Melrose Hall anchors a new Melrose Hub, allowing for future redevelopment of the International House and Massey Hall sites as part of an interdisciplinary cluster that could be centered around business, policy, international studies, and student success. In the center

of campus, two new buildings in the near term bolster the existing music, theatre, arts and architecture buildings to create a hub for the arts and humanities disciplines. This hub centers art, design, and creative expression with classrooms hubs and active outdoor spaces along Andy Holt Avenue. The Circle Park Hub is mixed-use in nature with academic, administrative, housing, athletic, and parking uses surrounding this entry point for campus. Leveraging the new bridge across the Tennessee River enhances the opportunity for this iconic place to collect and orient people to campus. At UTIA, redevelopment of the centrally located Racheff site as vibrant student hub with classrooms and research labs leverages the recently constructed Energy and Environment Science Research Building (EESRB) and the Teaching Learning Center. Additional capacity for greenhouse research is provided on the roof of a parking structure to allow for future growth in research while maintaining facilities proximate to teaching. Creating a central outdoor open space and pedestrian spine is important to establishing a hub and sense of place on UTIA. On the UT Research Park at Cherokee Farm, a dynamic innovation hub will allow for new and strengthened university-industry partnerships focused on research and workforce development throughout Tennessee and globally.



PROJECT HIGHLIGHTS

- 1. Chemistry Building** (Panhellenic Site): A new chemistry building on the current Panhellenic Building site will provide modern teaching and research labs to support the chemistry department and STEM disciplines across the University. Proximate to Strong Hall and the Mossman Building, the new Chemistry Building will extend the instructional and research corridor along Cumberland Avenue. This building will relocate the department from Buehler Hall, where an assessment of the building has identified significant structural issues.
- 2. Interdisciplinary Classroom/Humanities Building:** A new building east of the Art and Architecture Building provides frontage along Volunteer Boulevard and across Circle Park. The building should allow a diagonal connection from Circle Park into the arts and humanities hub with an open portal or public, glass atrium. There are no enabling projects to build on this site so it is identified as a near-term project to house campus classrooms and humanities departments. The building will consolidate humanities departments to create communities that include space for graduate students, while enabling a renovation of McClung Tower to support remaining departments in the near-term. The programming and development of this building should be considered in conjunction with the Interdisciplinary Academic Building on the Temple site because they will both be used house active-learning, campus-hosted classrooms.
- 3. Interdisciplinary Health, Research & Clinic** (Jessie Harris Site): A new Interdisciplinary Health, Research & Clinic building on the current Jessie Harris site will provide interdisciplinary space focused on social, behavioral, and human subject research and address growing facility condition issues. The location on the edge of campus, close to parking and the surrounding community make this an ideal site to co-locate clinic and research space. The building will provide synergies and space for EHHS, Social Work, Nursing, and Psychology in the near term. Relocation of the Early Learning Center is an enabling project for redevelopment. Once the new Nursing Building is complete, the Nursing Education Building and potentially the Silverstein Luper Building can provide swing space for current Jesse Harris occupants.
- 4. Interdisciplinary Research** (Dabney-Buehler Site): Once the Chemistry Building is complete, the majority of Dabney-Buehler Hall will be vacated. Redevelopment of the site provides the opportunity for a large interdisciplinary STEM research building that can complement the productive and growing basic research surrounding the Hill and Cumberland Avenue, especially the Science and Engineering Building. Maintaining part of Dabney Hall along Circle Drive should be considered to preserve the historic character of The Hill. The Walters Academic Building which has the infrastructure to support biological research laboratories should be evaluated as a possible location for swing space to accommodate biology faculty
- 5. Interdisciplinary Academic Building** (Temple Site): A new interdisciplinary academic building on the current Temple Building site provides the opportunity for instructional space closer to a large concentration of student housing. Facing Andy Holt Avenue, the ground floor should be active with classrooms, study and collaboration space, and possibly maker spaces. This building will have active learning classrooms that will help replace HHS and meet demands for campus. Within the arts and humanities hub, this building can accommodate and consolidate the arts. Construction will also enable renovation to the Art and Architecture Building for only the College of Architecture and Design. The building can be built in two phases as needed based on funding or phasing to relocation functions in Temple Hall. Swing space will need to be identified for the University Herbarium and specialized nursing research laboratories. The proposed Interdisciplinary Research building replacing Dabney-Buehler may be an opportunity to relocate the University Herbarium.



ADDITIONAL NEW BUILDING PROJECTS

In Design, Funded, or In Construction

- A. Croley Nursing Building
- B. Haslam College of Business
- C. Melrose Student Success

Near Term

- D. Second Creek Student Housing
- E. Volunteer Blvd and Lake Loudoun Blvd Residence Hall

Mid Term

- F. Academic Building (Circle Park Site)
- G. Communications and Student Services Building Addition
- H. Interdisciplinary Academic Building (Waters Site)
- I. Hoskins Addition



▲ Zeanah Chiller Plant

INFRASTRUCTURE

The construction of new facilities and major renovations identified within the time horizon of the plan will require regular coordination with Facilities Services to determine if steam, electrical, and chilled water service can be accomplished with existing infrastructure or if additional distribution or capacity is required.

Steam service to support proposed renovation projects and new facilities will generally involve connections to the existing infrastructure with limited upgrades required. Renovated facilities will utilize existing steam and condensate piping connections as much as possible. Where existing buildings are replaced with larger facilities, branch steam piping may need to be replaced with larger piping back to the mains.

Regional chiller plants which serve campus buildings will be utilized and expanded to serve renovated and new facilities. The University should explore connecting plants together where feasible to increase redundancy and reliability. Proposed new regional chiller plants include the following:

- A new plant at UTIA to serve the new Interdisciplinary Academic, Research Learning Commons Building on the Racheff site connected to the existing plant located in the Plant Biotech Building.
- A new plant near the Communications Building that would connect to the existing plants at the Philander P. Claxton Education Building and the Communications Building.
- A new plant with the proposed Interdisciplinary Health, Research & Clinic on the current Jessie Harris site. This plant would serve the new facility and provide redundancy for other nearby buildings.

Expanded chiller plants are proposed in three locations:

- Expansion of the Reese Chiller Plant in coordination with Reese and Carick projects.
- Expansion of the Regional Chiller Plant at Haslam Music Center to serve the new Interdisciplinary Academic Building (Temple Site).
- Expansion of the Dabney Chiller Plant in coordination with the renovation and replacement project of Dabney-Buehler.

Electrical service is distributed via two electrical substations to most buildings on campus and they carry sufficient capacity to serve the anticipated renovation projects and new facilities. Electrical system improvements will include modifications to circuiting arrangement, distribution equipment locations, and reliability improvements.

At UTIA, an additional medium-voltage circuit (circuit #1) needs to be provided from the Main Substation to reduce the overall load on the existing circuits and provide additional redundancy. Existing overhead distribution on UTIA will be removed as new buildings and new roads are built. The proposed loop road can serve as an opportunity to locate new ductbanks within the road.

Near Cumberland Avenue, medium-voltage circuits LA6 and LA8 will be extended from the Laurel Avenue substation to provide additional capacity and redundancy to serve the new Chemistry Building. On the southern part of campus, electrical upgrades are anticipated near the Student Recreational and Fitness Center (TRECS). The medium-voltage electrical distribution system modified as multiple buildings are served from single transformers. It is anticipated that circuits #7 and #8 may be used to provide loop distribution for this portion of campus.



▲ Laurel Substation



Caledonia Avenue - Before

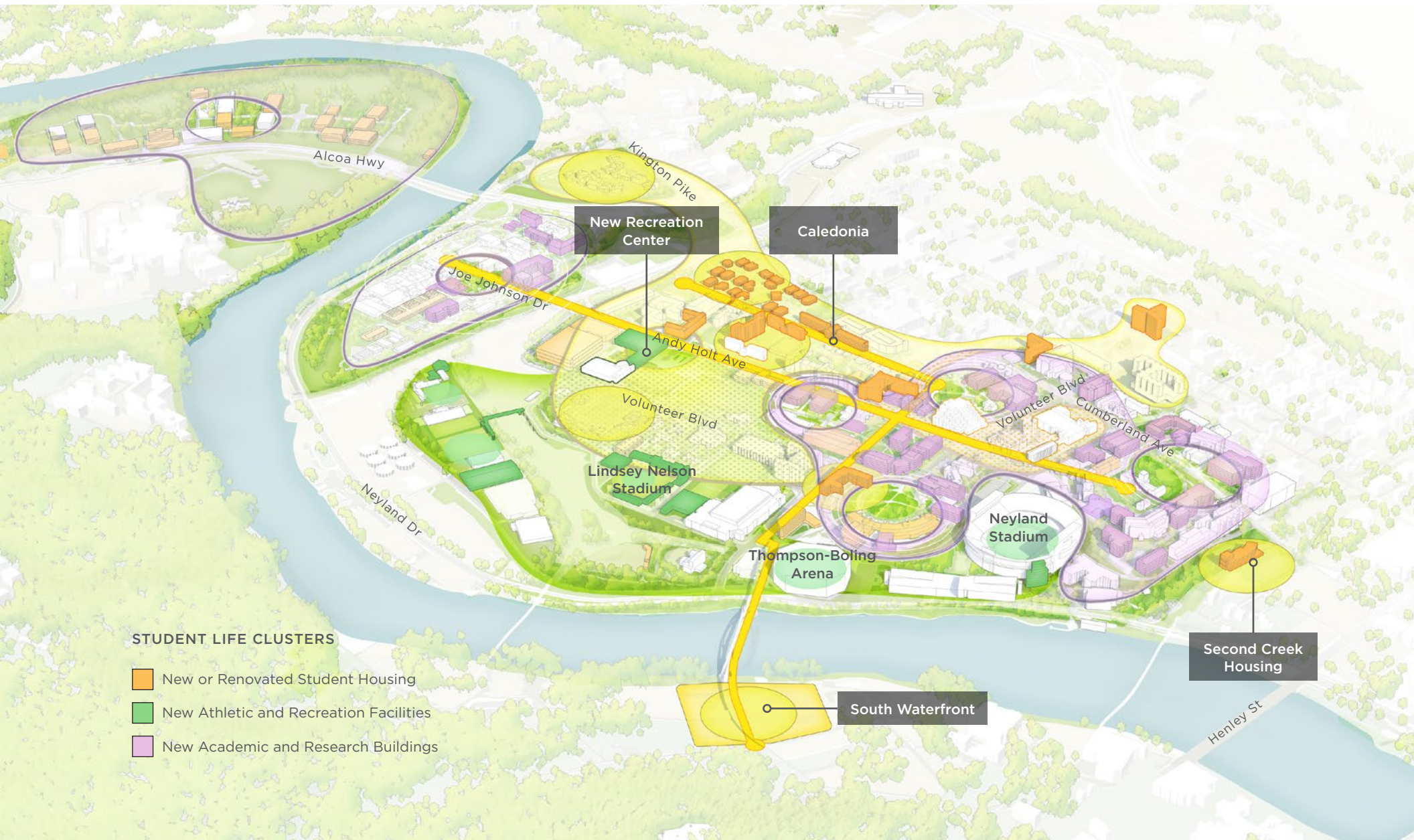


Caledonia Avenue - Proposed Concept

Student Life Clusters

Student life clusters refer to co-locating student housing, activator amenities such as dining, recreation, wellness, and student services that contribute to student success inside and outside the classroom, proximate to each other. The immediate need for 5,000 new student housing beds to meet demand and to enable renovation of existing residence halls provides the opportunity to define and expand engaging student life clusters that

contribute to the Volunteer experience. The master plan envisions distributing several student-life clusters across campus, intersecting and interacting with interdisciplinary academic and research hubs and campus edges to create a welcoming, vibrant, and mixed-use campus.



STUDENT LIFE CLUSTERS

- New or Renovated Student Housing
- New Athletic and Recreation Facilities
- New Academic and Research Buildings



STUDENT HOUSING

With enrollment growth, renewed commitment to a residential experience, and rising housing costs in Knoxville driving increased demand for on-campus housing, the master plan identifies opportunities for additional housing capacity while addressing deferred maintenance in aging halls. Through new construction and strategic leases, the University plans to provide 5,000 additional beds in the near-term planning horizon. A detailed housing study is underway to further assess the condition of existing housing, confirm housing demand, and refine site and phasing recommendations in this master plan.

Over the past decade, new student housing has been primarily constructed on the west side campus anchored by the new Rocky Top Dining Hall. Continued growth in this district is expected with two new residence halls and the redevelopment of Reese and Carrick Halls. To the north between Caledonia and Lake Avenues and west of Mt. Castle Park, an affinity housing neighborhood is envisioned as an opportunity to address growing demand for Greek Life.

Distributing student housing and student life amenities more broadly will enliven campus throughout the day and into the evening. Redevelopment of existing residence halls such as Clement and Laurel Halls provide the opportunity to add additional capacity north of Cumberland Avenue, closer to the academic core. A new residence hall across Lake Loudoun Boulevard from Stokely Hall will bolster this student life cluster, support additional capacity in the existing dining facility, and anchor the Circle Park hub. Another potential housing site on the east side of campus is the Second Creek Student Housing project. This site provides proximity to the Hill and downtown Knoxville. With limited nearby dining options, apartment-style units are best suited for this location.

GREEK HOUSING EXPANSION

Greek Life at UT Knoxville is experiencing growth on campus, and with it, interest from additional national chapters to establish a presence on campus. The master plan identifies this precinct, bordered by Lake Avenue and Caledonia Avenue, and from Volunteer Boulevard to the west and Mt. Castle Park to the east. Currently intermittently occupied by individual structures, there are six sites identified for near term development. Future phases could include additional housing sites. Proximity to Sorority Village and Cumberland Avenue make this an ideal location for smaller scale student housing, which will be able to mitigate the topography of the site while matching the scale of the neighborhood.



 Proposed Greek Housing Expansion



DINING

Dining facilities include all you care to eat at Stokely Hall and Rocky Top and a variety of dining options distributed across campus such as P.O.D grab-and-go options located in some residence halls, and a selection of fast casual options at the Student Union. With the addition of Rocky Top, the quantity of dining space on campus is not the issue. The challenge is the location of dining at peak times based on campus organization. During lunch, a large portion of the population is on the eastern part of campus which results in long wait times at the Student Union. There are also limited dining options near Clement and Laurel Halls in the evening. The master plan strives to provide a greater mix of uses across campus to balance demand and distribution of food. Providing more academic space in the Arts and Humanities hub and additional housing near Stokely Hall will allow for

greater use of Rocky Top and Stokely throughout the day. Strategic food truck locations and food in the redeveloped Jesse Harris or Hoskins sites will provide more options for the Hill and Cumberland Ave facilities. Additional dining facilities on UTIA that is also a priority need identified by the students, faculty, and staff who are there during the day and could be a transformational near-term opportunity.

RECREATION

RecSports provides a broad range of recreation, fitness, wellness, and sports activities for students, faculty, and staff. The master plan identifies a need for more recreation space to meet the needs of a growing student population. Expansion of the TRECS facility is identified as a near-term opportunity to meet growing demand for indoor recreation. Additional outdoor court space is also planned for the area. Opportunities to expand indoor recreation offerings for students living north of Cumberland Avenue should continue to be explored. Increased connectivity and improvements to the Third Creek Greenway will encourage utilization of the intramural fields at Sutherland Avenue and the proposed pedestrian bridge over the Tennessee River will enhance access to a broader range of community recreation and natural areas like Fort Dickerson Park and the Bluffs. Improved streetscape and connections east along Cumberland Avenue and Clinch Street also increase access to Worlds Fair Park and downtown Knoxville.



STUDENT SPACES

A variety of student services are available to support both the academic and personal success of students and are critical elements to support the Volunteer experience. Renovation of the Hodges Library and the co-location of services through the creation of the One Stop service desk has increased the visibility and accessibility of student services. The master plan recommends identifying additional opportunities to strategically distribute student service functions as ground-floor activators, including increasing the presence of student services at UTIA. Additional space and resources for physical and mental health and wellness will also be needed as the student population grows. Leveraging in-

person and virtual counseling and healthcare will increase access for students. Additional prayer, meditation, and respite spaces should be distributed throughout housing and academic buildings. Gender inclusive restrooms, lactation rooms, family spaces, and cultural spaces are also needed to provide a more welcoming and inclusive campus.



ATHLETICS

While not part of Student Life, Athletics greatly contributes to the Volunteer experience. Primarily located along the southern edge of campus, athletic facilities engage both the campus and surrounding community year-round for practice, games, and events. In coordination with the 2020 Athletic Facilities Master Plan and the 2022 Rise Glorious Strategic Plan, improvements to athletic facilities will support modernization and competition at the highest level to deliver an unparalleled student-athlete and fan experience. The master plan coordinates key projects such as improvements to Lindsey Nelson Stadium, Neyland Stadium, a proposed indoor track facility, and expansion of the docking sites for the Vol Navy. A bridge connection from the soccer fields across the train tracks by Fraternity Park and an expanded Nelson Stadium will better connect the athletic facilities to the rest of campus. Additionally, complementary streetscape and open space improvements throughout the athletics clusters allow for an inter-connected corridor of athletics facilities adjacent to the Tennessee River. The bridge across the river will provide even greater connectivity to the Knoxville community for events.

SECURITY

The University is dedicated to the safety and security of the campus community to promote a collaborative learning environment. The University of Tennessee Police Department (UTPD) regularly patrol campus, maintain a strong working relationship with community members, and offer numerous safety programs. The University also offers a T-Link late-night shuttle service, the LiveSafe app where students can share their location with a trusted person, and both a warning and alert system that publish health and safety warnings and critical incidents. The master plan recommends continuing to:

- Coordinate physical improvements with impacts to safety and security with campus public safety officials.
- Continue implementing building access controls and activity monitoring to better evaluate risk and occupancy, and control lockdowns and emergency access.
- Enhance pedestrian safety measures with improved lighting, vehicular crossings, accessibility, emergency call boxes, and sightlines.
- Regularly review potential security vulnerabilities such as poorly lit areas and develop a prioritized list of improvements. Increased lighting and surveillance should be added to the Caledonia, Terrace, and Lake Avenue corridors especially as new housing is developed.
- Coordinate further with the Knoxville Police Department to enhance the safety and security of campus edges and neighborhoods.



Joe Johnson Drive - Existing



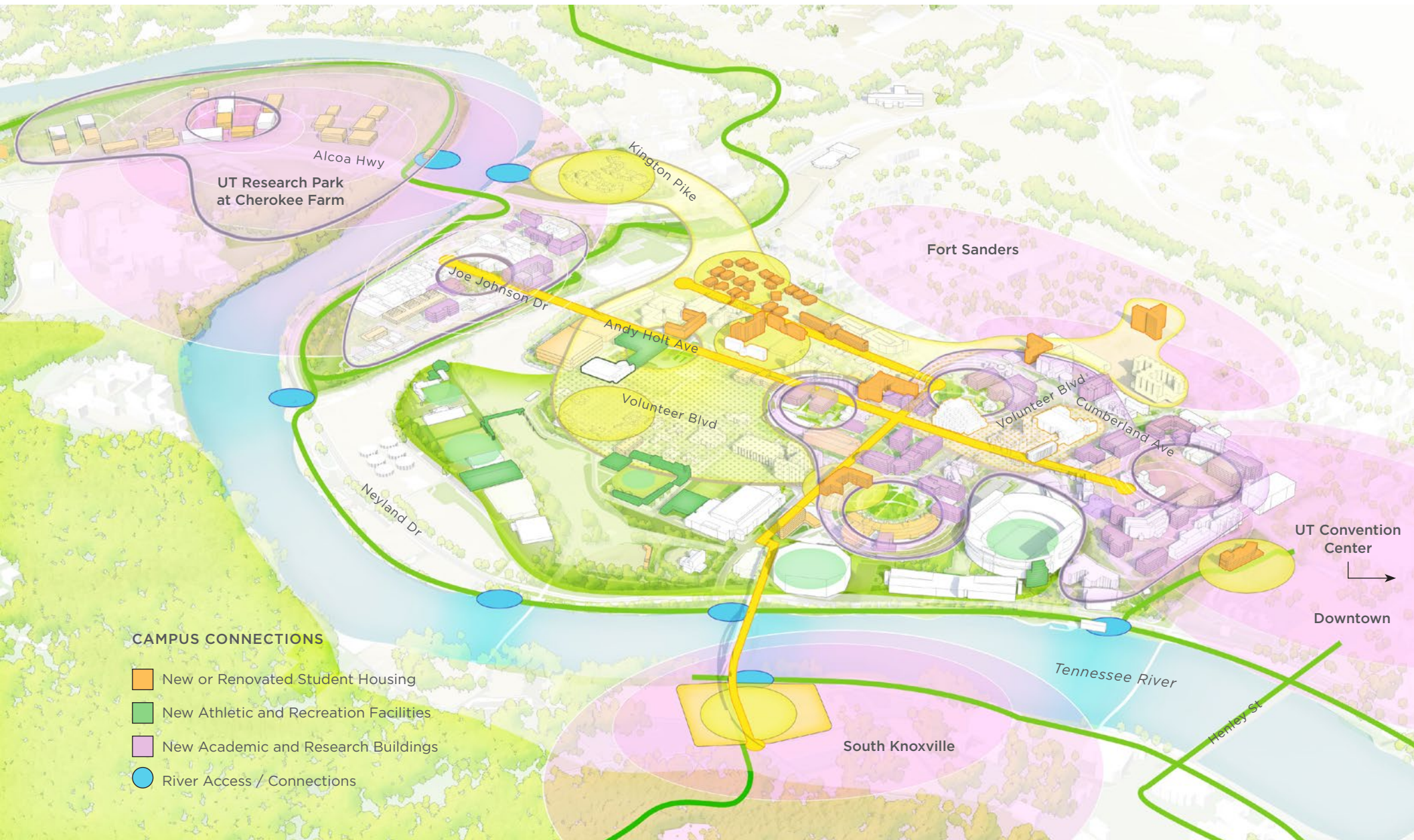
Joe Johnson Drive - Proposed Concept

Campus Connections

The master plan seeks to strengthen connectivity between campus hubs and between campus and Knoxville through a cohesive network of landscapes, pathways, and gateways. Celebrating connections to the Tennessee River, the master plan proposes improvements that enhance both visual and physical access to the river and to a broad network of regional greenways. The plan also seeks to improve campus edges and connections that leverage the UT Research Park at Cherokee Farm, the UT Convention Center, and Downtown Knoxville as assets for increased partnerships.

Several key open space and streetscape projects support greater connectivity and linkages within and beyond the campus boundary. The plan recommends extending the strong east-west connect that exists along the Andy Holt Avenue pedestrian and bicycle corridor to create a

consistent, high quality multimodal connection from the UT Research Park at Cherokee Farm to UTIA, The Hill, and downtown Knoxville. Streetscape improvements along the Joe Johnson bridge, providing protected pedestrian and bicycle movement, will diminish the perceived divide between the east part of campus and UTIA to the west, reinforcing a one-campus mindset. An improved east-west corridor along Caledonia Avenue with consistent building edges and an improved pedestrian experience and safety will support student life expansion and better connect housing to the Melrose Hub and Student Union. A much-needed north-south corridor will link the Melrose Hub, to the Arts and Humanities Hub, and extend down Lake Loudoun Boulevard. Continuing south, this new corridor links to the proposed City of Knoxville Pedestrian-Bicycle Bridge and across the Tennessee River to the South Waterfront Neighborhood.



OPEN SPACE

The master plan proposes open spaces of varying scale and typology that together will leverage previous capital investments, position the campus for future improvements, and ensure a cohesive, inclusive, and interconnected campus environment. Improvements such as the pedestrian bridge to Stephenson Drive and the City of Knoxville Pedestrian-Bicycle Bridge will enhance connectivity to disconnected areas of the campus, the city, and a broader network of open spaces and amenities. Renovation of existing spaces such as Presidential Courtyard are opportunities to reinforce campus communities and create spaces for active and passive recreation. The plan reimagines underutilized spaces such as at Melrose Place to support an interdisciplinary hub and leverage capital investments in new construction to create entirely new spaces. Every building project is an opportunity to enhance the campus landscape and advance the function of campus systems including stormwater management and sustainability initiatives.

Guidelines and strategies for open space build on a history of stewardship of campus landscapes and the recommendations of previous master planning. Campus-wide open space strategies include:

- Creating distinctive outdoor destinations and expanding the University's network of open spaces.
- Minimizing the impacts of development on the campus tree canopy, natural corridors and waterways.
- Utilizing a consistent family of materials, furnishings, and lighting for legibility and elevating the identity and brand.
- Provide a variety of open space typologies (lawn, plaza, meadow, etc.) with appropriate activators to support recreation, eating, studying, collaboration, rest, and instruction.
- Continuing to comply with all environmental regulations and leveraging campus landscapes to pursue sustainability goals and initiatives.
- Utilizing campus open spaces as research and teaching opportunities and enhance student, faculty, and staff engagement with campus landscapes through programs and initiatives.
- Preserving and enhancing natural systems that pass through the campus, such as Third Creek.
- Incorporating and celebrating the unique topography of the region while providing accessible and equitable pathways and experiences throughout campus.
- Strengthening connections between internal campus pedestrian corridors and perimeter greenway connections, creek and river corridors, and the broader Knoxville region trails and open spaces.
- Enhancing views and access to the Tennessee River wherever possible.
- Utilizing building edges and active ground floors to define and activate campus open spaces.
- Selecting regionally appropriate plant and construction materials that enhance the campus' location as a gateway to Knoxville's Urban Wilderness and Appalachians beyond.



Chapman Drive - Existing



Chapman Drive - Proposed Concept

Examples of Open Space Activators



*Outdoor classroom and lighting for nighttime activation
Grinnell College*














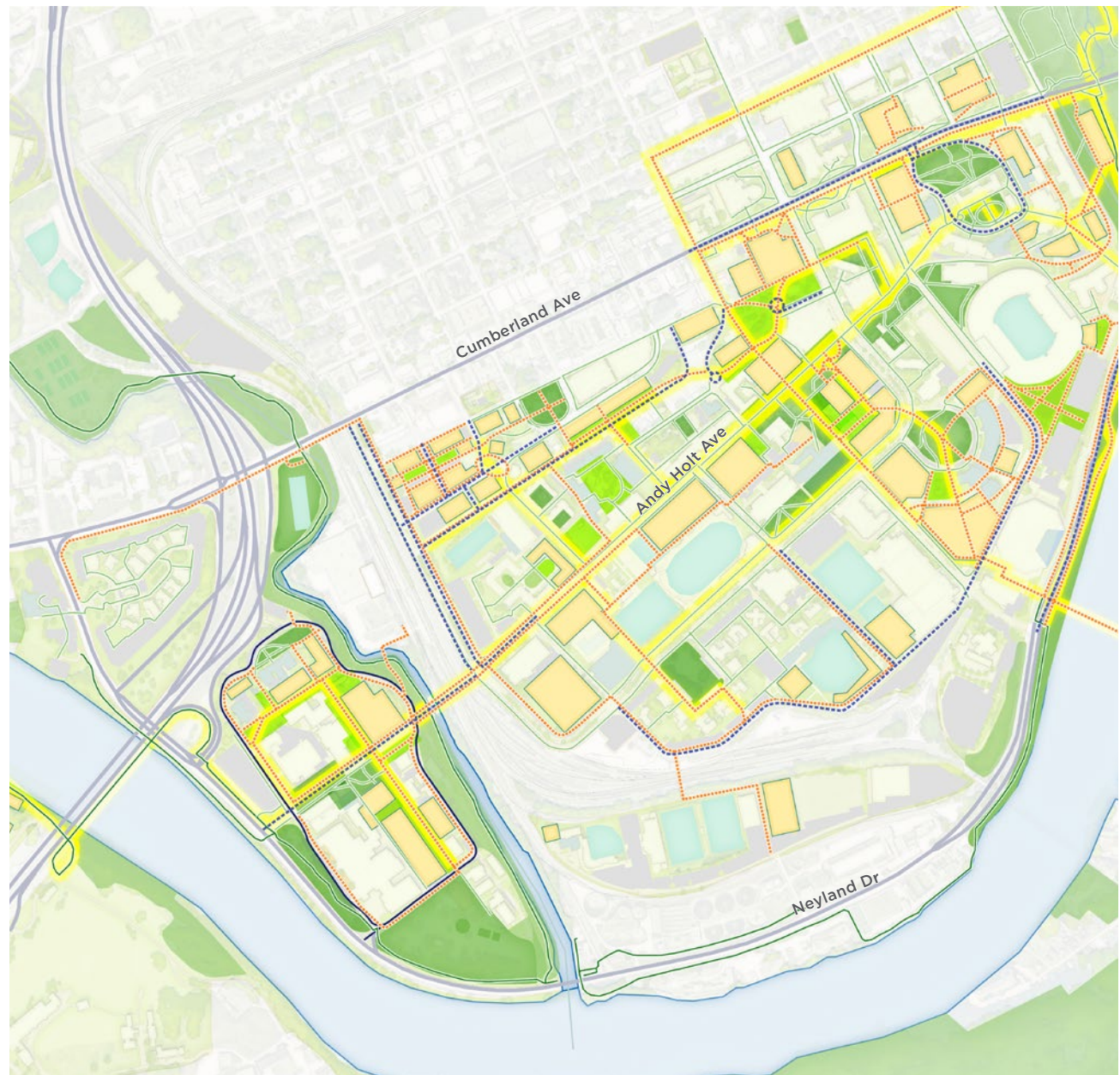
*Integrated seating and connection to indoor amenities
Denison University*



*Shaded moveable seating
Ringling College of Art and Design*

OPEN SPACE

-  Existing Pedestrian Route
-  Existing Greenway
-  New or Improved Pedestrian Route
-  Existing Road
-  Existing Major Road or Highway
-  New or Improved Road
-  Existing Athletic or Recreation Field
-  Existing Primary Open Space
-  Existing Natural Area
-  Development Site
-  New or Improved Open Space



STORMWATER MANAGEMENT

The University has a strong history of successful stormwater management practices. Stormwater runoff is transported through UT Knoxville's Municipal Separate Storm Sewer System (MS4) governed by State of Tennessee National Pollutant Discharge Elimination System (NPDES) permit that authorizes the discharge of pollutants to state waters. To prevent discharge of pollutants through UT Knoxville's MS4 and comply with state and federal regulations, the University has a stormwater management plan including the Runoff Reduction and Stormwater Mitigation policies.

For all new development and redevelopment sites over one acre, addressing water quality on site is required. Where conditions allow, measures using infiltration, evapotranspiration or capture/reuse should approach 100% pollutant removal. When this is not possible, 80% of suspended solids must be removed. Stormwater quantity must not exceed predevelopment hydrology and the first inch of rainfall must be 100% managed on site. If certain conditions are met, projects can qualify for an offsite mitigation program to offset all or a portion of the required stormwater management volume that cannot be managed on site. Offsite mitigation is permitted only within the UT campus properties which fall within the same USGS 12-digit hydrologic unit code (HUC) as the primary project and must be completed within 3 years of project approval.

The Tennessee Permanent Stormwater Management and Design Guidance Manual recommends the following interventions for Karst areas:

- Avoid concentration of runoff and disperse flows over the broadest area possible to avoid ponding.
- Small-scale LID practices can be effective but should be shallow. Larger bioretention relying on exfiltration into underlying soils are not recommended.
- Distributed treatment is recommended over centralized stormwater facilities treating over 20,000SF or ponding depth greater than 3 feet such as wet ponds, dry extended detention ponds and infiltration basins.
- Stormwater systems should avoid large contributing areas, deep excavation, or pools of standing water.
- Rainwater harvesting tanks are a preferred practice.
- Bioretention modifications include utilizing perforated under drains and bypasses for 2-and 10-year storms to address flooding.

Natural landscapes and other strategies that address water runoff and quality should be highlighted to increase awareness and education, like the space in front of Fred Brown Hall. The integration of additional green roofs to slow and infiltrate stormwater should also be considered. Green roofs can provide value on flat roofs where they may provide visual interest for taller adjacent construction or elevated outdoor gathering areas. In addition to supporting stormwater management, green roofs can also minimize the urban heat island effect and contribute to carbon sequestration.

TRANSPORTATION

The master plan endorses a comprehensive approach to transportation including resources for pedestrians, bicycles, micromobility such as scooters and e-bikes, buses, and single occupancy vehicles. Reliance on single occupancy vehicles commits substantial land holdings to parking facilities, can reduce support for community health and well-being, and result in greater greenhouse gas emissions. As the University of Tennessee Knoxville's student enrollment and faculty and staff population grow, parking may not be the highest and best use of limited land within the campus core. Defining strategies that prioritize the pedestrian experience and provide a reliable, multi-modal network is critical for the University's long-term use of resources.

Parking

Without changes to parking policies, UT Knoxville will require additional parking supply to manage demand. The anticipated student and staff population growth over the course of the 10-year master plan indicates a need for 2,900 additional parking spaces if existing parking policies remain in effect. This need will be expanded because a number of proposed building projects will reduce the amount of presently available parking, as shown in the table below where near- and mid- term construction eliminates 1,640 parking spaces. Several parking projects are planned in the ten-year time horizon to maintain parking spaces at 2023 levels with an overall net gain of 150 spaces. Under the current parking practices, that would leave a shortfall of 2,750 spaces to serve the campus community.

FUTURE PARKING DEMAND

EXISTING SUPPLY	ESTIMATED 2030 DEMAND	
17,000 (total)	19,000	1,100
16,100 (90% efficiency)	19,000	2,900

CAMPUS MASTER PLAN PARKING SUMMARY

PHASE	LOSS	GAIN	NET ▲
In Design	-600	0	-600
Near Term	-760	1,430	670
Mid Term	-880	960	80
10-Year Impact	-2,240	2,390	150

The master plan proposes to manage parking demand on the Knoxville campus in four ways: policy changes, pricing structure changes, development of leasing partnerships and satellite parking lots, and constructing additional parking spaces. By balancing these four approaches, the University can manage the number of new spaces required on campus.

Enhancements to walkability and facilities for bikes, scooter, and other forms of micromobility within the campus core can reduce the number of vehicular trips that occur. Yet, parking demand will continue to be strong and exceed supply within the campus core for commuting students, staff, faculty, and visitors and accessible parking must be provided.

Increases in residential development on Cumberland Avenue and the Fort Sanders neighborhood have boosted the demand for non-commuter residential

parking. Students living on or proximate to campus are leaving their car parked for longer durations and utilizing ride-hailing and delivery apps and services. As students are less likely to regularly use their vehicle, UT can look to shift the residential parking supply outward to the campus perimeter, prioritizing the supply within the campus core for commuters and visitors. Parking at perimeter locations should be encouraged through low-cost incentives like the existing perimeter commuter lots on the east and west sides of campus. To be successful, remote parking needs to be safe, secure, and supported by bus or transit that can get people to and from their vehicle easily and reliably. Additional parking locations could extend as far as downtown Knoxville and be made available through partnerships with the City of Knoxville, allowing parking in underutilized facilities during main hours.

For new and replacement parking, the master plan recommends moving away from large, single use parking structures and incorporating parking into buildings with other uses whenever possible. While the initial cost of construction is likely greater, the highest and best use of campus land must be considered, and often academic and research needs are the priority in the campus core to provide adjacencies and collaboration. The UT Drive Garage on Volunteer Boulevard adjacent to TRECS is the only single-use parking structure identified in the master plan. This ideal location could provide 1,000 spaces, easing pressure on the UTIA parking lots, and serving central campus. Two housing projects, the Lake Loudoun and Volunteer Boulevard Student Housing and the Second Creek Housing project, are ideally suited for parking at or below grade given the topography of their sites. At UTIA, a parking structure is proposed adjacent to the College of Veterinary Medicine building, with greenhouse structures on the top level to limit shading to the greenhouses and preserve land for multi-story buildings that support research and academic needs. Greenhouses can also be located on the top of other buildings to achieve the same multi-use land goal. North of Joe Johnson Drive, the current site of the Racheff building and the Biosystems Engineering and Environmental Science Laboratory unlocks a large site with the opportunity for several levels of parking integrated into a larger building.

Over the course of the master plan, several sites were identified with opportunities to incorporate parking within building projects including Residence Hall 5, Haslam Business Building, White Avenue Garage and “Lot 9” adjacent to the student Union. Ultimately, parking was not specifically included in the planning for these projects at this time.



Parking Opportunities

Projects with opportunities to incorporate parking

- A. Res Hall #5
- B. Haslam Business Building and Massey Site
- C. White Ave Garage additional levels
- D. Lot 9

Garage / Surface Lot Sites

- E. Stephenson Drive - garage or surface parking
- F. Joe Johnson Drive & Neyland
- G. Laurel Hall Garage
- H. Cherokee Farm surface parking

*Projects Included in the Master Plan**

1. UT Drive Garage (1,000)
2. Lake Loudon Housing (280)
3. Second Creek Housing (150)
4. Ag Garage & Greenhouses (600)
5. Interdisciplinary Academic Building - Racheff Site (360)

**Spaces gained in project*



UT Knoxville is seeking hybrid and electric vehicles to supplement its existing campus fleet. This is a great addition to the existing inventory of electric vehicles (EV) and charging stations available on campus for student, faculty, and staff use. Increased use and demand requires thoughtful consideration of where and how an electrified campus fleet and personal vehicles will be charged. For campus users, EV charging should be distributed equitably across campus to meet demand. For the campus fleet, a centralized solution that ties into larger electricity infrastructure is likely required.

Sustainable parking practices combined with smart parking technology and continued collaborations with UT and Knoxville transit services will help mitigate existing parking deficiencies and reduce future demand. A deeper and more comprehensive parking and transportation study is recommended to evaluate and determine the best policies, reflect campus sustainability goals, and consider the financial realities and implications.

Transit

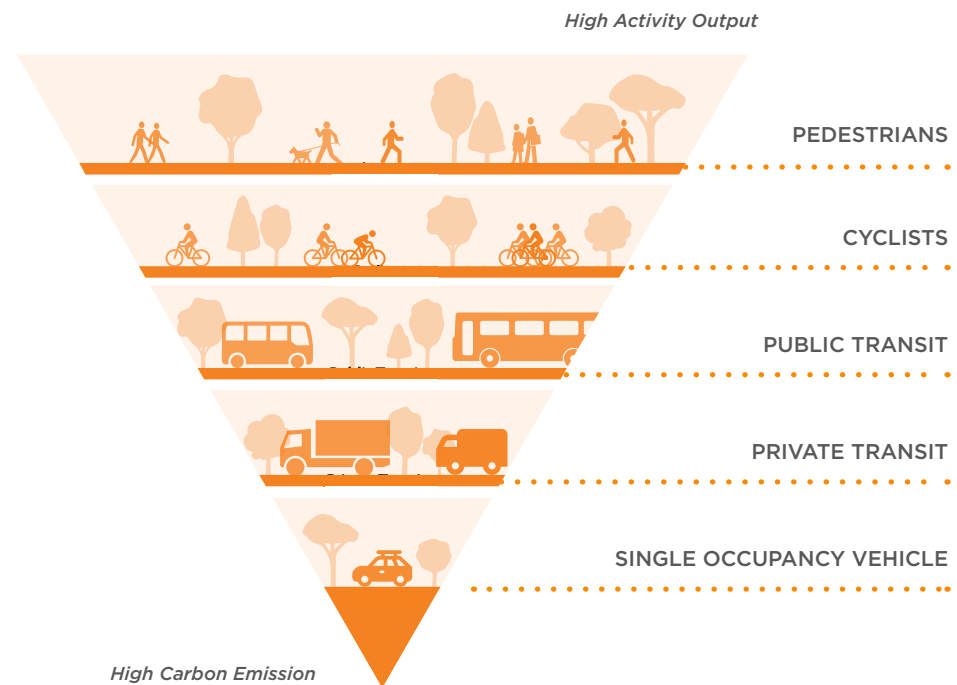
The continued support of the campus transit system is critical to providing accessible transportation and to support future growth. Potential strategies to alleviate parking demand in the campus core and providing additional lots on the campus periphery can be complemented with new or adjusted bus routes. When considering conversions of streets to pedestrian-only, the impact on bus routes will need to be evaluated. Bus-only transit lanes would provide improved service and prioritize shared transit over single-use vehicles. As presence expands on the UT Research Park at Cherokee Farm, providing reliable, convenient bus service will become increasingly important to connect community partners to the campus core.

Active Transportation

Strategies that prioritize active transportation for those who are able while maintaining access for those with physical disabilities can be achieved through the advancement of a safe, multi-modal transit strategy that places priority on walking, bicycles (or e-bikes), and transit. Ensuring ease of access for visitors and the broader campus community will improve legibility and ensure the University provides a more welcoming and inclusive experience for all.

Modifications to the transportation network are opportunities to prioritize pedestrian travel and reduce pedestrian vehicular conflicts. When constructing new pedestrian and multimodal pathways, high visibility crosswalks and enhanced lighting should be included. Consolidating curb cuts and service areas to reduce conflict areas can also be an effective strategy. A pedestrian-only cycle at intersections that allow some crossing time for pedestrians prior to a green indication for vehicles can provide a safer and more comfortable crossing condition, particularly in congested areas of campus and along Cumberland Avenue. In some cases, collaboration with the city will be needed.

Bicycles infrastructure improvements can support the expected growth in use of scooters and electric bicycles. Providing dedicated bike lanes will mitigate the inherent challenges of navigating speed differences between cars, bicycles and micromobility. Providing direct linkages to the Neyland Greenway, Second Creek Greenway, and the future pedestrian-bicycle bridge across the Tennessee River will connect the campus-wide network to the Knoxville region.



SUSTAINABILITY

The University of Tennessee Knoxville's 2020-2030 Sustainability Master Plan targets a 40% reduction in greenhouse gas emissions from fiscal year 2007-2008 levels and 50% waste diversion by 2030. Targets for greenhouse gas emissions reductions are also established for 2040 and 2050 with carbon neutrality targeted for 2061. The recommendations within the master plan identify key ways that the physical campus can achieve these targets and other environmental stewardship, fiscal responsibility, and social equity goals. For more information about the overall strategy for advancing sustainability at the University of Tennessee Knoxville including operational and engagement activities, refer to the 2020-2030 Sustainability Master Plan.

Low Carbon Construction

The master plan recommends a combination of building renovation, and renewal, and demolition. Construction is a carbon intensive activity with significant embodied carbon emitted through the extraction, manufacture, transportation, and construction of building products and materials. Efforts to renovate and renew existing buildings maintains the value of their embodied carbon and prevents the environmental, financial, and social impact of construction demolition waste as well as the impacts associated with new construction. Building renovation and renewal is therefore a carbon minimization strategy. The University of Tennessee Knoxville should execute building renovations that maximize the preservation of existing building envelopes (except exterior glazing) and structural systems to the greatest extent practical.

Where new construction is required, the University should require demolition contractors to divert at least 75% of construction waste from landfills and require construction of new low-carbon buildings that outperform Carbon Leadership Forum baselines for building envelope and structural materials by at minimum 10%. Low carbon construction can be achieved in a variety of ways including the prioritization of sustainable wood construction ahead of steel and concrete structures. Where steel and concrete are required, the University of Tennessee Knoxville should ensure that recycled content percentages are high (above 90% for steel; above 15% for concrete) and that local sourcing criteria are prioritized.



EMBODIED CARBON

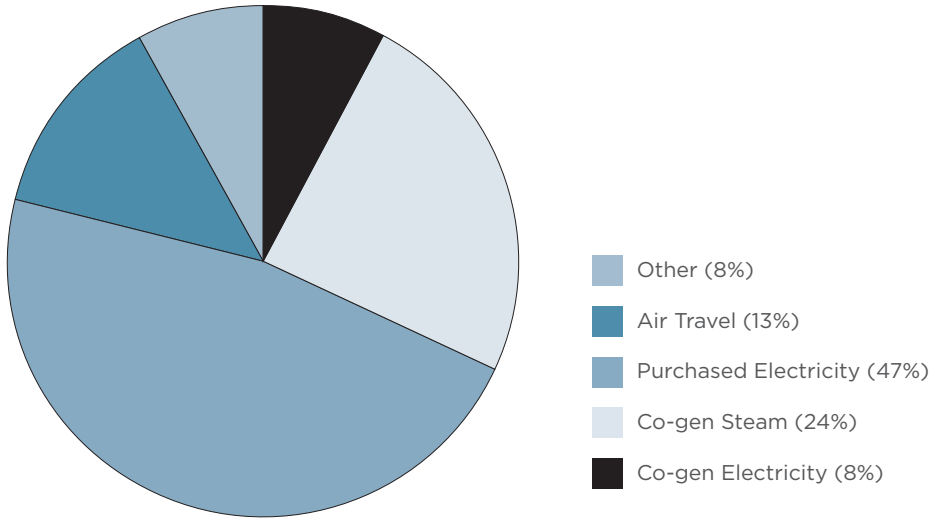
Emissions associated with the manufacture, transport, and construction of materials, together with end-of-life emissions



OPERATIONAL CARBON

Emissions associated with the in-use phase of a building

FY 19 UTK GREENHOUSE GAS EMISSIONS (mtCO2-eq)



Energy

According to the University’s fiscal-year 2019 greenhouse gas emissions reporting, 47% of the institution’s emissions are attributable to purchased electricity while 24% of the greenhouse gas emissions are attributable to on-campus co-generation of steam. These two energy sources are the greatest portions of the greenhouse gas emissions profile and as a result actions that reduce the consumption of purchased electricity and steam or that offset the emissions associated with this consumption are the most impactful way to cut the University of Tennessee Knoxville’s greenhouse gas emissions.

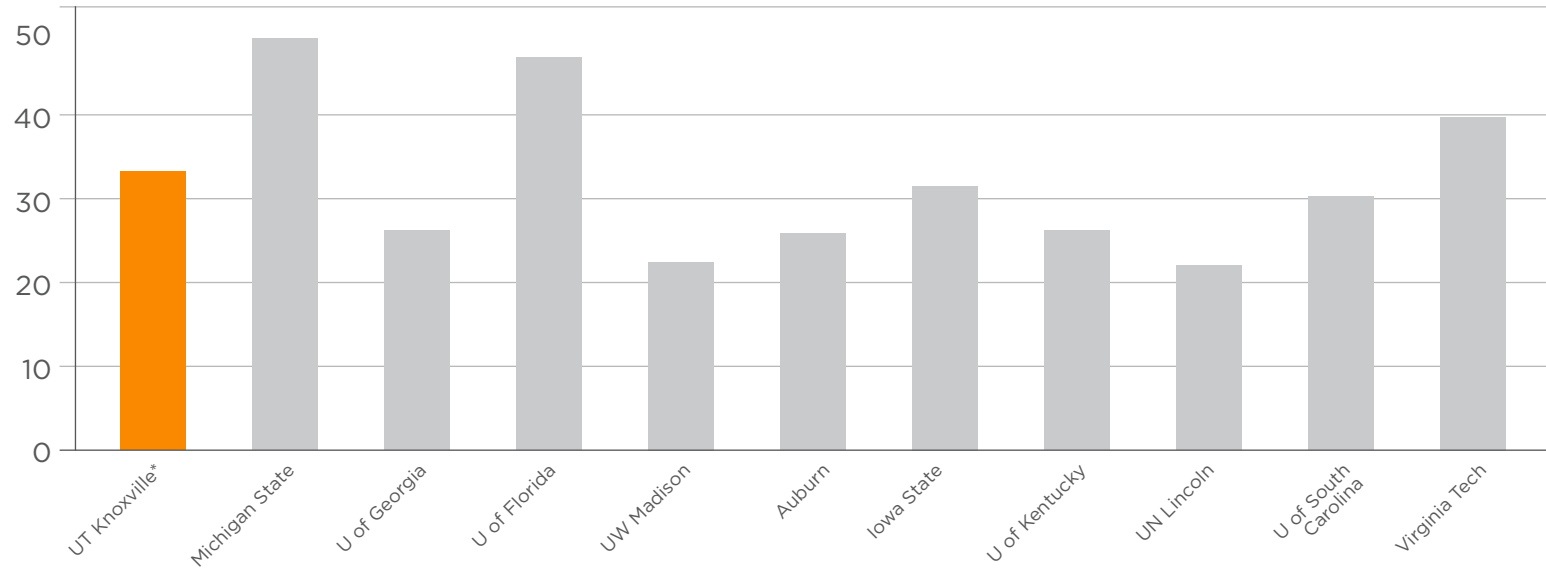
When the University purchases electricity, the energy comes from the Knoxville Utilities Board, which is part of the broader Tennessee Valley Authority (TVA). The TVA itself has a decarbonization plan in place which targets a 70% reduction of carbon by 2030 and an aspirational goal of carbon neutrality by 2050. It is likely, therefore, that the electricity available to UT Knoxville to purchase will become cleaner and have fewer carbon emissions over time, but there are steps the University can take to accelerate that work more locally without waiting for the TVA to clean the grid. It is also possible that electricity demand will increase in the Tennessee Valley over the next 30 years in ways that make it more difficult for the TVA to achieve its own carbon neutral electricity production goals which would put at risk the University of Tennessee, Knoxville's ability to purchase clean, renewable electricity directly from the utility.

Water Management

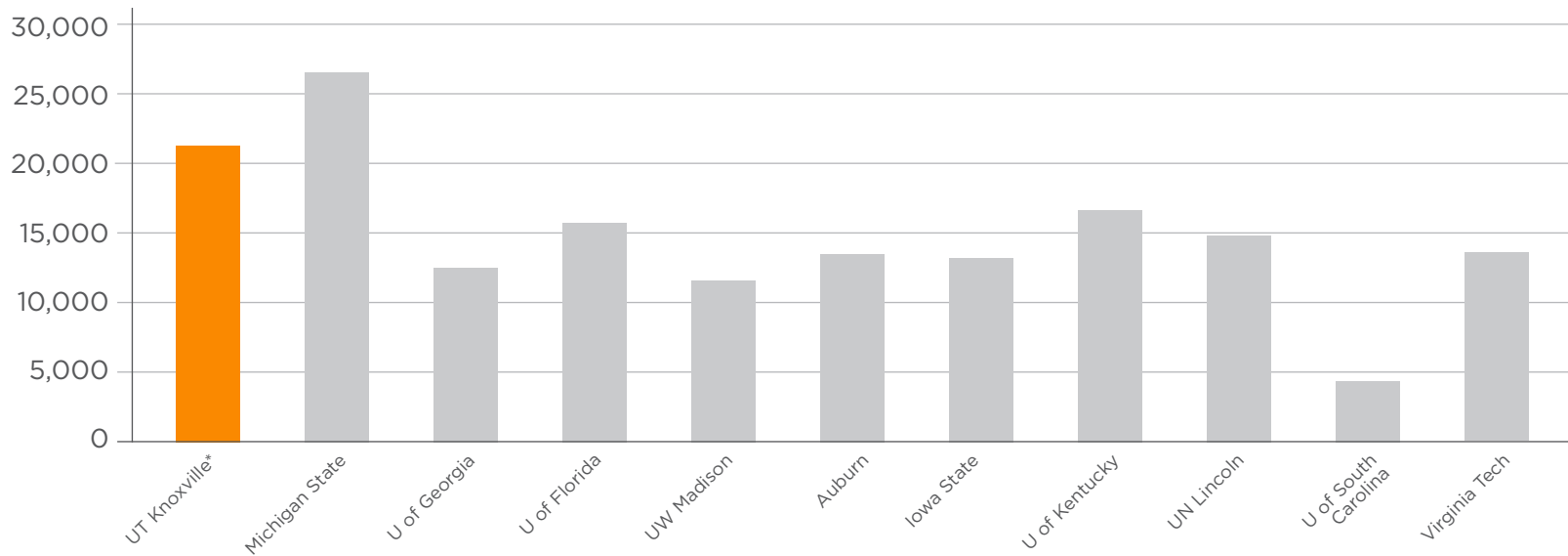
At present, potable water is primarily utilized for all water needs which means that it is suitable for human consumption. Not all end uses of water, however, require water that is cleaned to this standard. Water for drip irrigation and toilet flushing, for example, can be cleaned to a lesser standard without negatively impacting human or environmental health.

Beyond advancing strategies to increase water efficiency such as systematic retrofits of flush and flow fixtures, the University should utilize strategies for water capture and reuse including stormwater and condensate that can be retained in cisterns and then reused in drip irrigation and toilet and urinal flushing. Minimum performance criteria can ensure consistent water capture and reuse systems across campus to support streamlined maintenance and operations.

POTABLE WATER USE PER UNIT FLOOR AREA (GALLONS/SF)



POTABLE WATER USE PER WEIGHTED CAMPUS USER (IN GALLONS)







5

Master Plan Projects Phasing and Implementation Plan

IMPLEMENTATION PLAN

The sequencing of projects included in the master plan incorporates the current understanding of needs and priorities, and it should be expected that some variation in the order of implementation from the master plan should be expected. Sequencing of projects takes into account moves, enabling projects required, high level understanding of swing space needs, and previous projects requiring completion.

Cost Benchmarking

High level cost estimates have been provided, based on costs per square foot (SF) of current comparable projects and/or preliminary cost estimates developed as part of initial project planning by Facilities Services. For renovations, a range of \$300 to \$550 per square foot has been used, with student housing and interior only renovations at the low end, to restorations of historic spaces and veterinary medicine hospital spaces at the high end. Exterior envelope repairs or replacements, building systems upgrades, and the presence of hazardous materials when known were factored into the metrics for each project. Where demolition of an existing building is part of the project, demolition cost of \$15 to \$20 per square foot have been assigned based on the complexity of the project. Projects at UTSI are assumed to have higher cost due to the remote location and limited contractors available to bid the work.

For new construction projects, costs per square foot are informed by the program of the building, with student housing at the low end of the range at \$500, and wet lab and technology intensive research space at \$800. Projects at UTSI are assumed to carry higher costs due to the remote location.

Parking has been identified in several of the projects. Cost assumptions for parking garages are based on dollars per parking space, with \$75,000 for an above ground garage institutional level garage, and an additional \$15,000 per parking space for garages below grade. Garages are sized according to the metric of 400 SF per parking space, which incorporates drive aisle and circulation in addition to the parking space itself.

Costs have been developed for projects which would occur over the next 10 years, however, escalation has not been incorporated into the cost model. Additionally, cost are provided for construction only, additional budget must be allocated for project soft costs.

In Design, Funded or In Construction (0-2 years)

The following list of projects were in various stages of planning, design, or construction during the completion of this master plan. As funding has been secured, cost estimates have not been provided for these projects.

State Funds

1. Energy & Environmental Science Research Building
2. Veterinary Medical Center - Teaching and Learning Center
3. Croley Nursing Building
4. Haslam College of Business Building

Potential Public-Private Partnerships

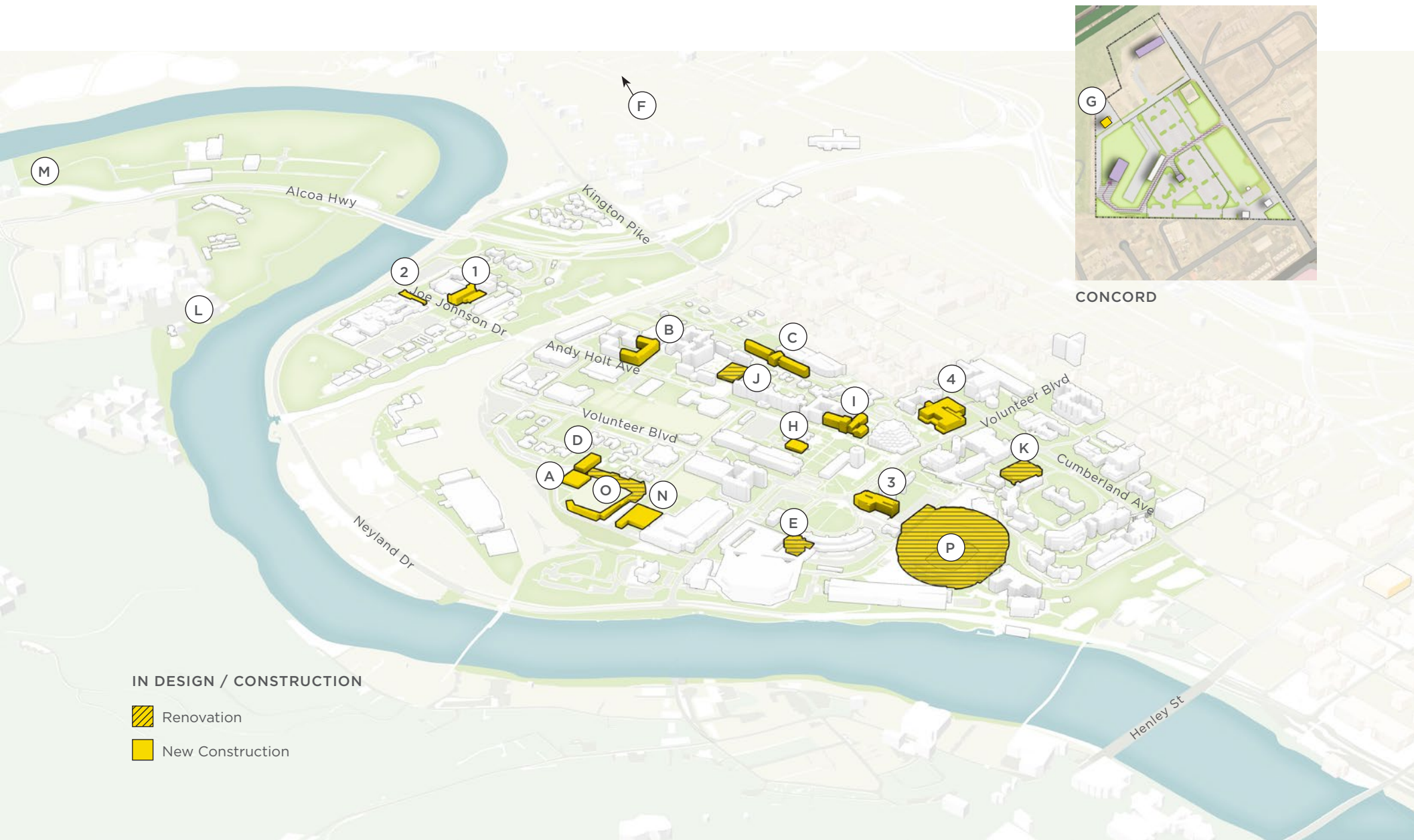
- A. Baseball - Indoor Practice field
- B. Residence Hall #4
- C. Residence Hall #5
- D. Todd Helton Drive Residence Hall

E & G Residual and Donor Funds

- E. Andy Holt Tower Interior Renovations
- F. Collections & Storage at Middlebrook Pike
- G. Concord Property - Academic Building Storage
- H. Jenny Boyd Carousel Theatre New Building
- I. Melrose Student Success
- J. Presidential Court Building Renovation
- K. Walters Academic Building Renovation
- L. William M. Bass Building Expansion

Athletics Auxiliary Funds

- M. Golf Practice Facility - Weight Room
- N. Haslam Field Expansion
- O. Lindsey Nelson Stadium Renovations
- P. Neyland South Stadium Renovations



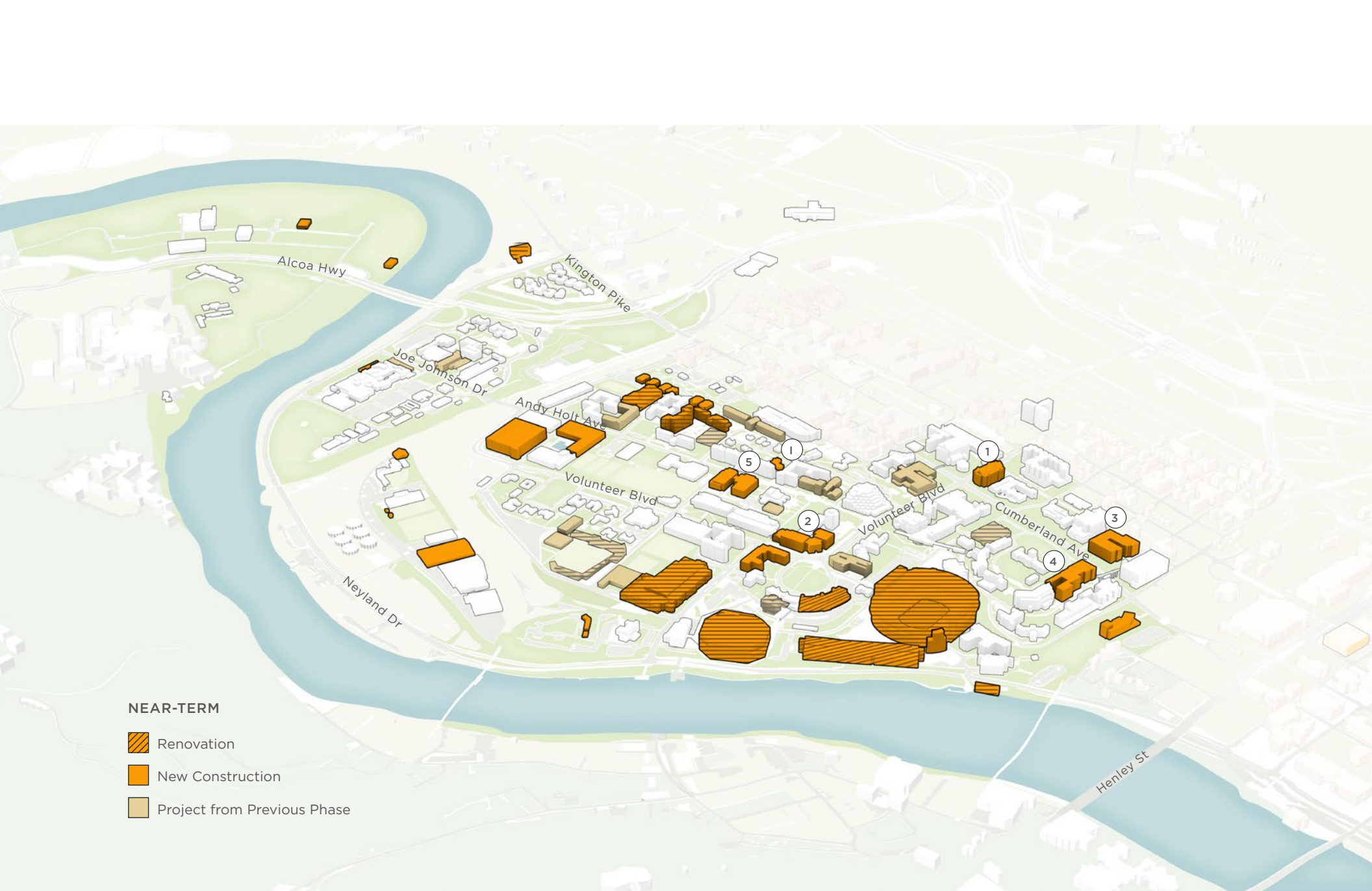
Near Term (0-5 years)

New construction and major renovation projects anticipated to be completed within five years utilizing various funding sources are identified below. Near term projects utilizing state funds are ranked in order of anticipated completion. Other projects are listed in alphabetical order. Estimated costs are provided in 2023 dollars and, where applicable, associated demolition is identified.




NEAR TERM PROJECT COST ESTIMATES

STATE FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (2023 Dollars)	UNIT
1. CHEMISTRY BUILDING (PANHELLENIC SITE)				\$131,669,000	N/A*
PANHELLENIC BUILDING - DEMOLITION	-51,000				
NEW CONSTRUCTION			163,000		
BUEHLER (CHEMISTRY) -DEMOLITION	-122,000				
2. INTERDISCIPLINARY CLASSROOM / HUMANITIES BUILDING			200,000	\$130,000,000	\$650/SF
3. INTERDISCIPLINARY HEALTH, RESEARCH, AND CLINIC BUILDING (JESSIE HARRIS SITE)				\$150,048,000	
EARLY LEARNING CENTER - RESEARCH AND PRACTICE - DEMOLITION	-9,000			\$129,000	\$15/SF
JESSIE HARRIS DEMOLITION	-83,000			\$1,248,000	\$15/SF
NEW CONSTRUCTION			198,000	\$148,671,000	\$750/SF
4. DABNEY - BUEHLER RENOVATION AND EXPANSION				\$158,480,000	
DABNEY RENOVATION		113,600		\$62,480,000	\$550/SF
DABNEY - BUEHLER SITE - ADDITION			120,000	\$96,000,000	\$800/SF
5. INTERDISCIPLINARY ACADEMIC BUILDING (TEMPLE SITE)				\$182,315,000	
NEW CONSTRUCTION			280,000	\$182,000,000	\$650/SF
TEMPLE HALL - DEMOLITION	-16,000			\$315,000	\$20/SF

* N/A. Cost estimates for projects noted with N/A were provided by Facilities Services.

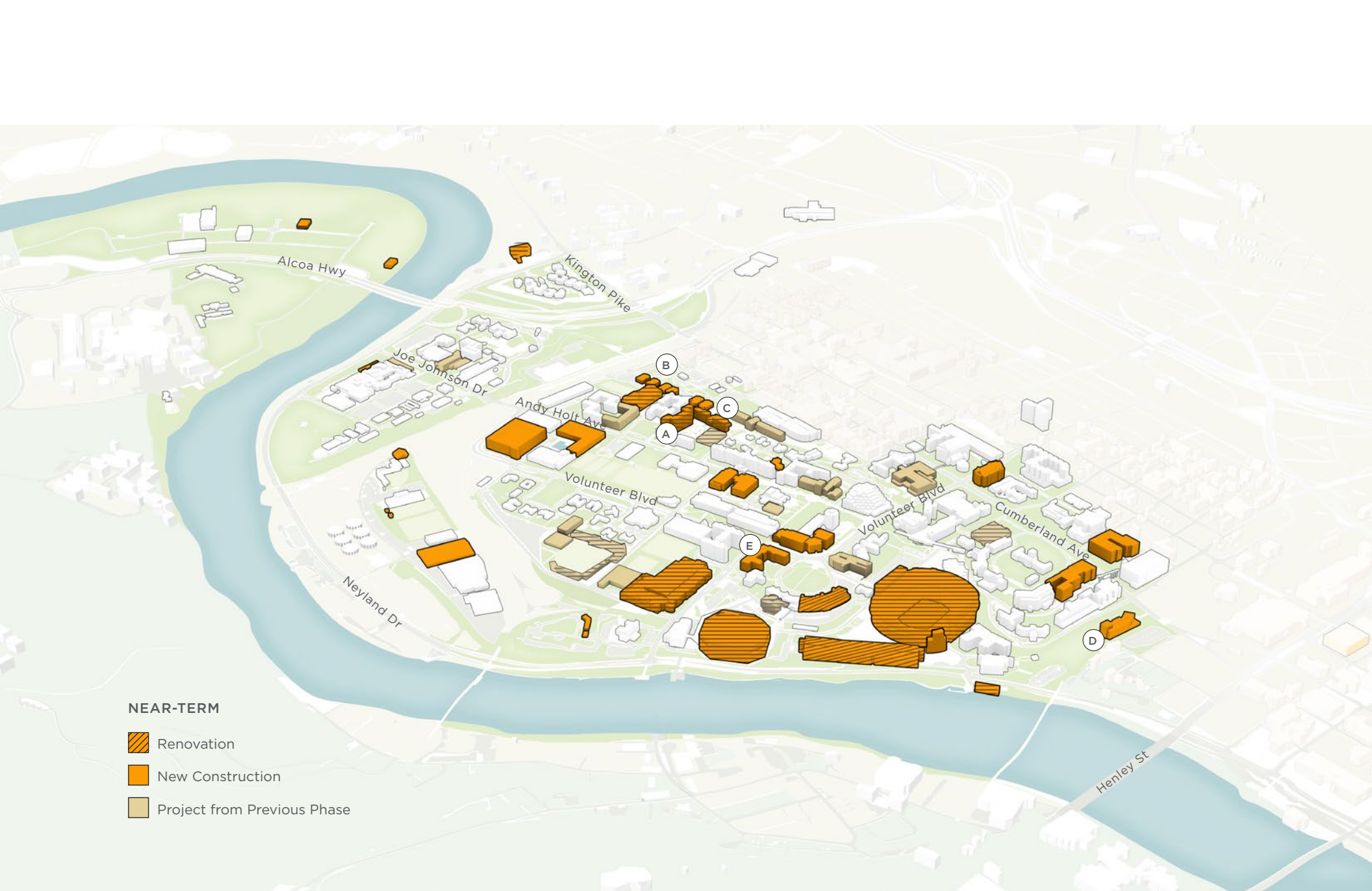


NEAR-TERM

-  Renovation
-  New Construction
-  Project from Previous Phase

NEAR TERM PROJECT COST ESTIMATES

HOUSING AUXILIARY FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (2023 Dollars)	UNIT
A. CARRICK HALL REDEVELOPMENT					
CARRICK RENOVATION		227,000		\$68,100,000	\$300/SF
CARRICK REPLACEMENT - 900 BEDS	-227,000		270,000	\$139,500,000	\$500/SF
B. GREEK HOUSING EXPANSION				\$36,000,000	
6 HOUSING SITES, APPROXIMATELY 12,000 SF EACH			72,000		\$500/SF
C. REESE HALL REDEVELOPMENT					
REESE RENOVATION		111,000		\$33,300,000	\$300/SF
REESE REPLACEMENT - 550 BEDS	-111,000		165,000	\$84,700,000	\$500/SF
D. SECOND CREEK STUDENT HOUSING (POTENTIAL PARTNERSHIP WITH CITY OF KNOXVILLE)				\$76,000,000	
APARTMENT-STYLE HOUSING - 250 BEDS			130,000	\$64,750,000	\$500/SF
PARKING GARAGE - 150 SPACES			60,000	\$11,250,000	\$75,000/SPACE
E. VOLUNTEER BLVD AND LAKE LOUDOUN BLVD RESIDENCE HALL				\$145,200,000	
STUDENT HOUSING - 800 BEDS			240,000	\$182,000,000	\$500/SF
PARKING GARAGE - 280 SPACES				\$25,200,000	\$90,000/SPACE



NEAR-TERM

-  Renovation
-  New Construction
-  Project from Previous Phase

NEAR TERM PROJECT COST ESTIMATES

E & G RESIDUAL DONOR FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (2023 Dollars)	UNIT
F. COMMUNICATIONS BUILDING RENOVATION		50,000		\$103,460,000	N/A*
G. COMPUTING AND DATA BUILDING - CHEROKEE FARM			26,000	\$19,500,000	\$750/SF
H. CONCORD PROPERTY PROJECTS					
H.1 CONCORD PROPERTY - FACILITIES SERVICES SURPLUS AND STORAGE			90,000	\$5,000,000	\$450/SF
H.2 CONCORD PROPERTY - FACILITY SERVICES			10,000	\$40,500,000	\$500/SF
H.3 CONCORD PROPERTY - FLEET MANAGEMENT			10,000	\$6,000,000	\$600/SF
H.4 CONCORD PROPERTY - PUBLIC SAFETY BUILDING			20,000	\$13,000,000	\$650/SF
I. CULTURAL AND RECREATION CENTER - CHEROKEE FARM			4,150	\$5,400,000	**
J. FRIESON BLACK CULTURAL CENTER EXPANSION		1,500	2,200	\$1,649,000	N/A*
K. GROUNDS OPERATION SUPPORT BUILDING				\$7,760,000	N/A*
OFFICE BUILDING			10,000	\$6,500,000	\$650/SF
HIGH BAY SPACE			1,800	\$1,260,000	\$700/SF
L. TRECS (TENNESSEE RECREATION CENTER FOR STUDENTS) EXPANSION				\$156,750,000	N/A*
STUDENT AQUATIC CENTER - DEMOLITION	-71,000				
TRECS (TENNESSEE RECREATION CENTER FOR STUDENTS) EXPANSION			243,000		
M. SUTHERLAND SUPPORT BUILDING & TURF REPLACEMENT			1,500	\$4,400,000	N/A*
N. UT CULINARY INSTITUTE & CREAMERY SITE REDEVELOPMENT					***
O. UT DRIVE GARAGE				\$75,800,000	
DEMO FLEET MANAGEMENT BUILDING	-11,000			\$100,000	\$12/SF
DEMO UT DRIVE SERVICE BUILDINGS A, B, C	-55,000			\$700,000	\$12/SF
PARKING GARAGE - 1,000 SPACES			400,000	\$75,000,000	\$75,000/SPACE
P. UTSI INNOVATION BUILDING #1			60,000	\$42,000,000	\$700/SF
Q. VETERINARY MEDICAL CENTER - SMALL ANIMAL HOSPITAL RENOVATION				\$13,100,000	
RENOVATION		15,000		\$8,080,600	\$550/SF
ADDITION			7,000	\$5,053,500	\$750/SF



* N/A. Cost estimates for projects noted with N/A were provided by Facilities Services.

** Estimate includes both 4,150 GSF of indoor space and outdoor spaces.

*** Feasibility study currently underway.



NEAR-TERM

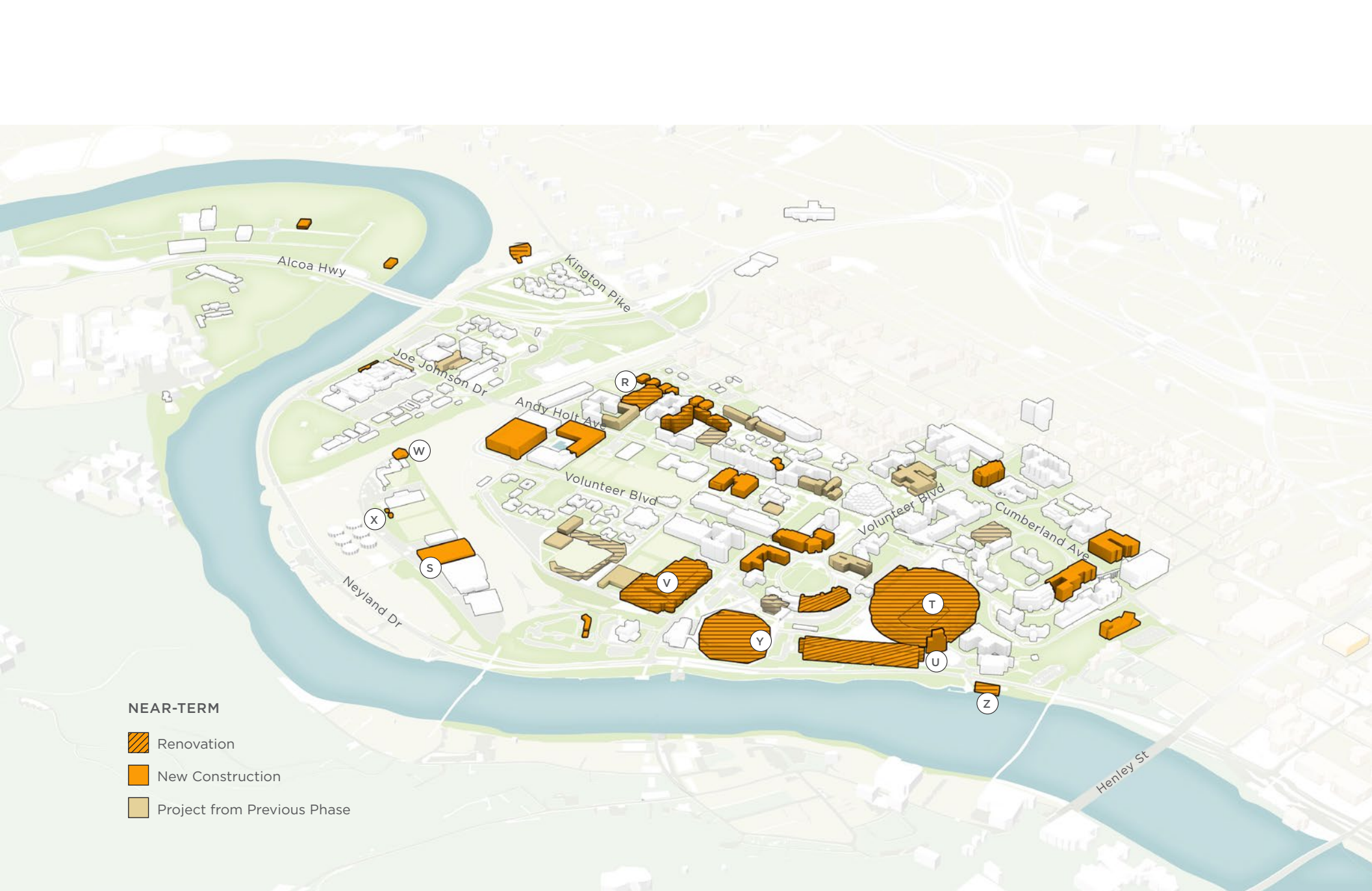
-  Renovation
-  New Construction
-  Project from Previous Phase

NEAR TERM PROJECT COST ESTIMATES

ATHLETICS AUXILIARY FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (2023 Dollars)	UNIT
R. GOODFRIEND TENNIS CENTER RENOVATION				\$6,534,000	
RENOVATION		9,700		\$4,374,000	\$450/SF
ADDITION			2,900	\$2,160,000	\$750/SF
S. INDOOR TRACK PRACTICE FACILITY				\$35,090,000	N/A*
NEW CONSTRUCTION			135,000		
PARTIAL DEMO-UT WAREHOUSE	-92,000				
T. NEYLAND STADIUM EAST RENOVATION				\$90,370,000	N/A*
U. NEYLAND STADIUM HOTEL AND G10 REDEVELOPMENT					**
V. NEYLAND THOMPSON SPORTS CENTER RENOVATION		26,000		\$3,110,000	N/A*
W. SHERRI PARKER LEE SOFTBALL STADIUM EXPANSION		3,000	15,000	\$9,900,000	N/A*
X. SOCCER COACHES' OFFICE BUILDING			2,600	\$1,375,000	N/A*
Y. THOMPSON-BOLING ARENA - RIVER CLUB		67,000	27,000	\$24,600,000	N/A*
Z. WAYNE G BASLER BOATHOUSE IMPROVEMENTS AND ADDITION		18,000	5,500	\$3,850,000	N/A*

* N/A. Cost estimates for projects noted with N/A were provided by Facilities Services.

** Feasibility study currently underway.



NEAR-TERM

-  Renovation
-  New Construction
-  Project from Previous Phase

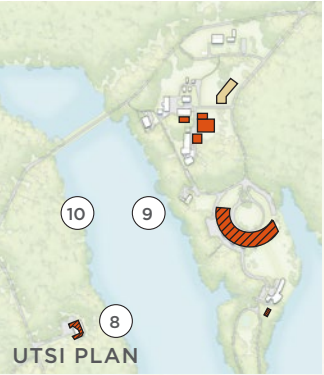
Mid Term (5-10 years)

New construction and major renovation projects identified below are mid term opportunities to be completed within the next five to ten years. Projects are listed in alphabetical order. Cost estimates are in 2023 dollars.

MID TERM PROJECT COST ESTIMATES

STATE FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (Current Dollars)	UNIT COST
1. ACADEMIC BUILDING (CIRCLE PARK SITE)				\$44,100,000	
NEW CONSTRUCTION			67,500	\$43,900,000	\$650/SF
DEMOLISH SILVERSTEIN LUPER	-12,000			\$200,000	\$20/SF
2. ART & ARCHITECTURE BUILDING RENOVATION				\$78,340,800	
FIRE SAFETY, WINDOWS REPLACEMENT, AND EXTERIOR CLEANING				\$7,000,000	N/A*
INTERIOR RENOVATION AND SYSTEMS UPGRADE		178,400		\$71,340,800	\$400/SF
3. COLLEGE OF VET MED RESEARCH SPACE AND EXPANSION			35,300	\$28,200,000	\$800/SF
4. COMMUNICATIONS & STUDENT SERVICES BUILDING RENOVATION AND ADDITION				\$92,945,000	
BUILDING RENOVATION		131,400		\$52,570,000	\$350/SF
BUILDING ADDITION			80,000	\$40,000,000	\$500/SF
MINOR DEMOLITION TO CONNECT CIRCLE PARK TO POINTS SOUTH	-25,000			\$375,000	\$15/SF
5. INTERDISCIPLINARY ACADEMIC, RESEARCH LEARNING COMMONS BUILDING (RACHEFF SITE)				\$237,995,000	
NEW CONSTRUCTION			279,500	\$209,645,000	\$750/SF
BIOSYSTEMS ENGINEERING AND ENVIRONMENTAL SCIENCE LAB BUILDING DEMOLITION	-50,000			\$993,000	\$20/SF
BIOSYSTEMS ENGINEERING AND SOIL SCIENCES OFFICE - BUILDING DEMOLITION	-17,000			\$257,000	\$15/SF
RACHEFF DEMOLITION	-6,000			\$100,000	\$15/SF
PARKING - 360 SPACES				\$27,000,000	\$75,000/SPACE
6. INTERDISCIPLINARY INSTRUCTIONAL BUILDING (WALTERS SITE)				\$148,000,000	
INTERDISCIPLINARY INSTRUCTIONAL BUILDING - WALTERS DEMOLITION	-158,000			\$3,300,000	\$20/SF
NEW CONSTRUCTION			207,000	\$144,900,000	\$700/SF
7. MORGAN HALL BUILDING RENOVATION AND ADDITION				\$68,400,000	
MORGAN HALL BUILDING ADDITION			52,500	\$33,900,000	\$650/SF
MORGAN HALL BUILDING RENOVATION		86,300		\$34,500,000	\$400/SF
8. UTSI MAIN ACADEMIC BUILDING RENOVATION		102,500		\$41,000,000	\$400/SF
9. UTSI RESEARCH LAB BUILDING			80,000	\$64,000,000	\$800/SF
10. UTSI TALON LAB BUILDING ADDITION			12,000	\$9,600,000	\$800/SF

*N/A. Cost estimates for projects noted with N/A were provided by Facilities Services.



MID TERM PROJECT COST ESTIMATES

HOUSING AUXILIARY FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (Current Dollars)	UNIT
A. CLEMENT HALL REDEVELOPMENT		172,900		\$51,900,000	\$300/SF
B. UTSI DORMITORY BUILDING RENOVATION		20,200		\$7,000,000	\$350/SF
E & G RESIDUAL AND DONOR FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (Current Dollars)	UNIT
C. HOSKINS RENOVATION AND ADDITION				\$82,100,000	
HOSKINS - ADDITION (ACADEMIC)			152,500	\$76,000,000	\$650/SF
HOSKINS - PARTIAL DEMOLITION	-119,000			\$2,400,000	\$650/SF
HOSKINS RESTORATION		5,000	3,300	\$3,700,000	\$500/SF
D. HPER / ROTC NEW BUILDING				\$123,400,000	
NEW CONSTRUCTION			200,000	\$120,000,000	\$600/SF
HPER - DEMOLITION	-169,000			\$3,400,000	\$20/SF
E. RESEARCH BUILDING AT UT RESEARCH PARK AT CHEROKEE FARM			200,000	\$160,000,000	\$800/SF
F. STOKELY MANAGEMENT RENOVATION FOR INTERDISCIPLINARY RESEARCH AND OFFICE		176,000		\$41,000,000	N/A*
G. TRECS RENOVATION		149,000		\$52,200,000	\$350/SF
H. UTIA GARDEN EDUCATION AND DISCOVERY CENTER			24,800	\$9,920,000	\$400/SF
I. UTIA PARKING GARAGE WITH GREENHOUSES				\$60,000,000	
GREENHOUSES ON ROOF			30,000	\$15,000,000	\$500/SF
PARKING GARAGE - 600 SPACES			240,000	\$45,000,000	\$75,000/SPACE
J. UTSI C-STAR BUILDING RENOVATION			10,000		
ATHLETICS AUXILIARY FUNDS	DEMO GSF	RENO GSF	NEW GSF	CONSTRUCTION COST (Current Dollars)	UNIT
K. ALLAN JONES AQUATIC CENTER RENOVATIONS AND ADDITIONS				\$26,775,000	
RENOVATION	10,500			\$4,725,000	\$450/SF
ADDITION		12,000		\$9,600,000	\$800/SF
HVAC RENOVATION	83,000			\$12,450,000	\$150/SF

*N/A. Cost estimates for projects noted with N/A were provided by Facilities Services.



Long Term (10+ years)

The master plan reserves sites for future development beyond the 10 year horizon. Identifying long term development sites maintains future flexibility and the ability to achieve long term goals and opportunities.

LONG TERM PROJECTS

State Funds

1. Academic and Research Building (Ferris Site)
2. Academic and Research Building (Perkins Site)
3. Academic and Research Building (UTIA NE Site)
4. Academic Building (HSS Replacement)
5. Academic Building (McClung Tower Replacement)
6. Academic Building (UTIA McCord Site)
7. Academic Building Site & Garage (Massey Site)
8. Andy Holt Tower Building Renovation
9. Austin Peay Building Renovation
10. Crops Genetics Laboratory Renovation
Food Safety Building Renovation
11. Interdisciplinary Research Building (UTIA South Site)
12. Nielsen Physics Renovation and Addition
13. Nursing Education Building Renovation and Expansion

Housing Auxiliary Funds




- A. Housing Village
- B. Laurel Residence Hall Redevelopment
- C. Hess Residence Hall Redevelopment

E & G Residual and Donor Funds

- D. Andy Holt Tower Garage Replacement
- E. International House Redevelopment
- F. Mixed Use Building Site - Pedestrian Bridge Landing
- G. South Waterfront Projects
- H. Research Buildings at UT Research Park at Cherokee Farm



LONG-TERM

-  Renovation
-  New Construction
-  Project from Previous Phase

Open Space

Phased open space improvements to refine campus landscapes leverage investment in campus buildings, enhance campus connectivity, improve campus edges and gateways, and provide ecosystem services.

OPEN SPACE PROJECTS

In Design / Construction

- A. Regional Stormwater Park
- B. Volunteer Boulevard Streetscape

Near-Term (0-5 years)

- C. Joe Johnson Road Diet and Bridge Pedestrian
- D. Storm Water Mitigation Bank (Mt Castle Park)
- E. Streetscapes (Lake, Terrace, Caledonia)
- F. Third Creek Corridor (partnership with City of Knoxville)
- G. Todd Helton Dr. Improvements and Realignment
- H. UTIA Loop Road
- I. UTIA Pedestrian Spine
- J. Vol Navy Boat Docks

Mid-Term (5-10 years)

- K. Melrose Place Improvements
- L. Neyland Drive Improvements
- M. Pedestrian Bridge to Stephenson Drive / Soccer Field
- N. Phillip Fulmer Pedestrian Improvements
- O. Presidential Courtyard Renovation (storm water mitigation bank)
- P. The Hill Hardscape and Pedestrian Crossing Improvements

Long-Term (+10 years)

- Q. City of Knoxville Pedestrian-Bicycle Bridge Landing Plaza
- R. Cumberland Avenue Improvements
- S. Neyland Stadium Plaza





SITE PROJECTS

- In Design / Construction
- Near-Term (0-5 years)
- Mid-Term (5-10 years)
- Long-Term (10+ years)
- Proposed Renovation



Illustrative Plan

Phased New Buildings and Major Renovation



IN DESIGN / CONSTRUCTION

-  Renovation
-  New Construction



NEAR-TERM

-  Renovation
-  New Construction

MID-TERM

-  Renovation
-  New Construction

LONG-TERM

-  Renovation
-  New Construction



UT Space Institute, Tullahoma



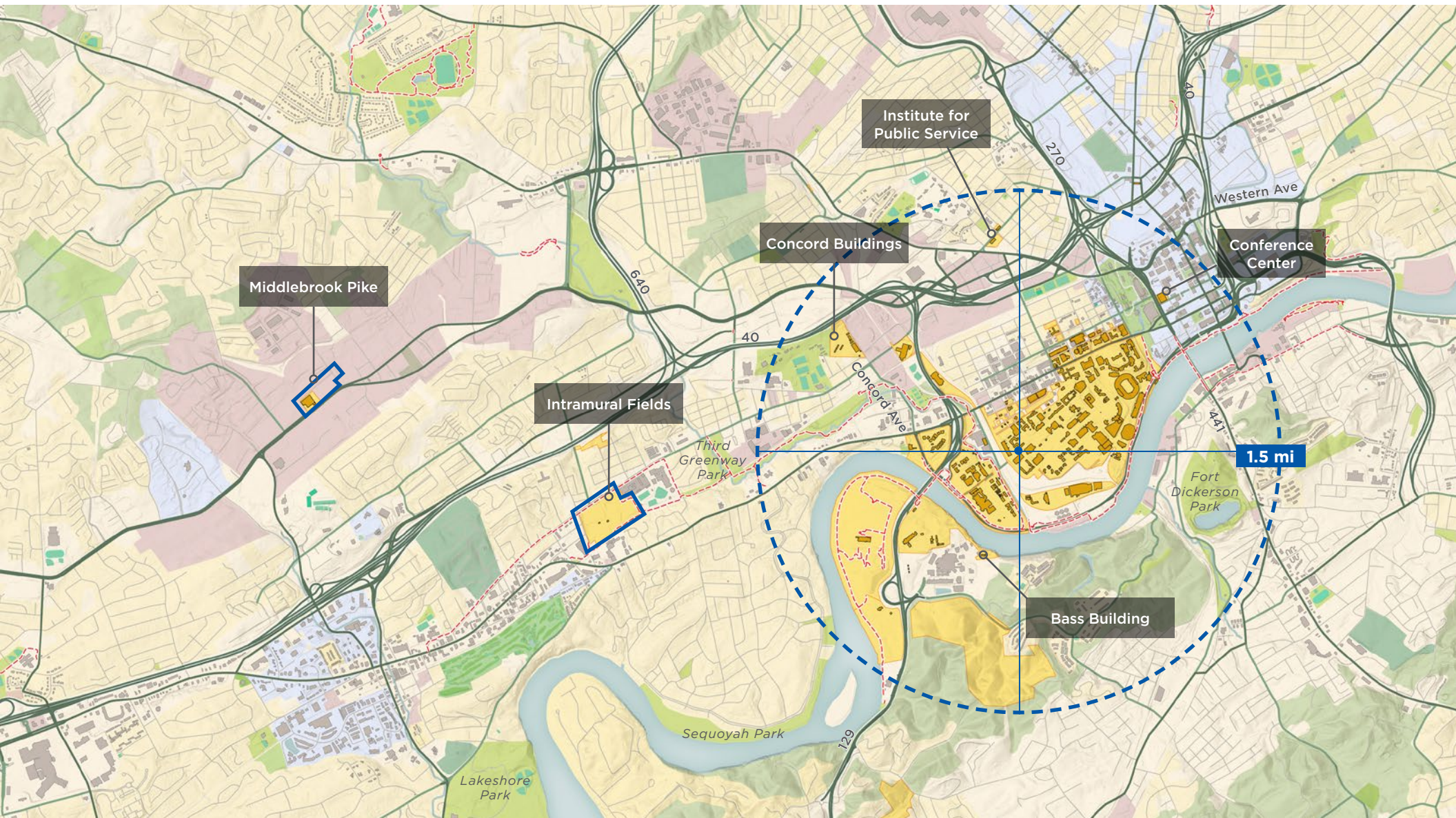
LAND ACQUISITION

Land Acquisition

The University is in a period of transformational growth, fueled by increasing student enrollment, robust academic programs, and research expansion. In Knoxville, the institution's campus are bordered by the Tennessee River and its tributaries, bisected by train yards, and bounded to the north by the Cumberland Avenue corridor. Land for expansion is limited. Partnerships within greater Knoxville, particularly downtown, are an opportunity to support the campus' strategic goals and stewardship of land within the campus core.

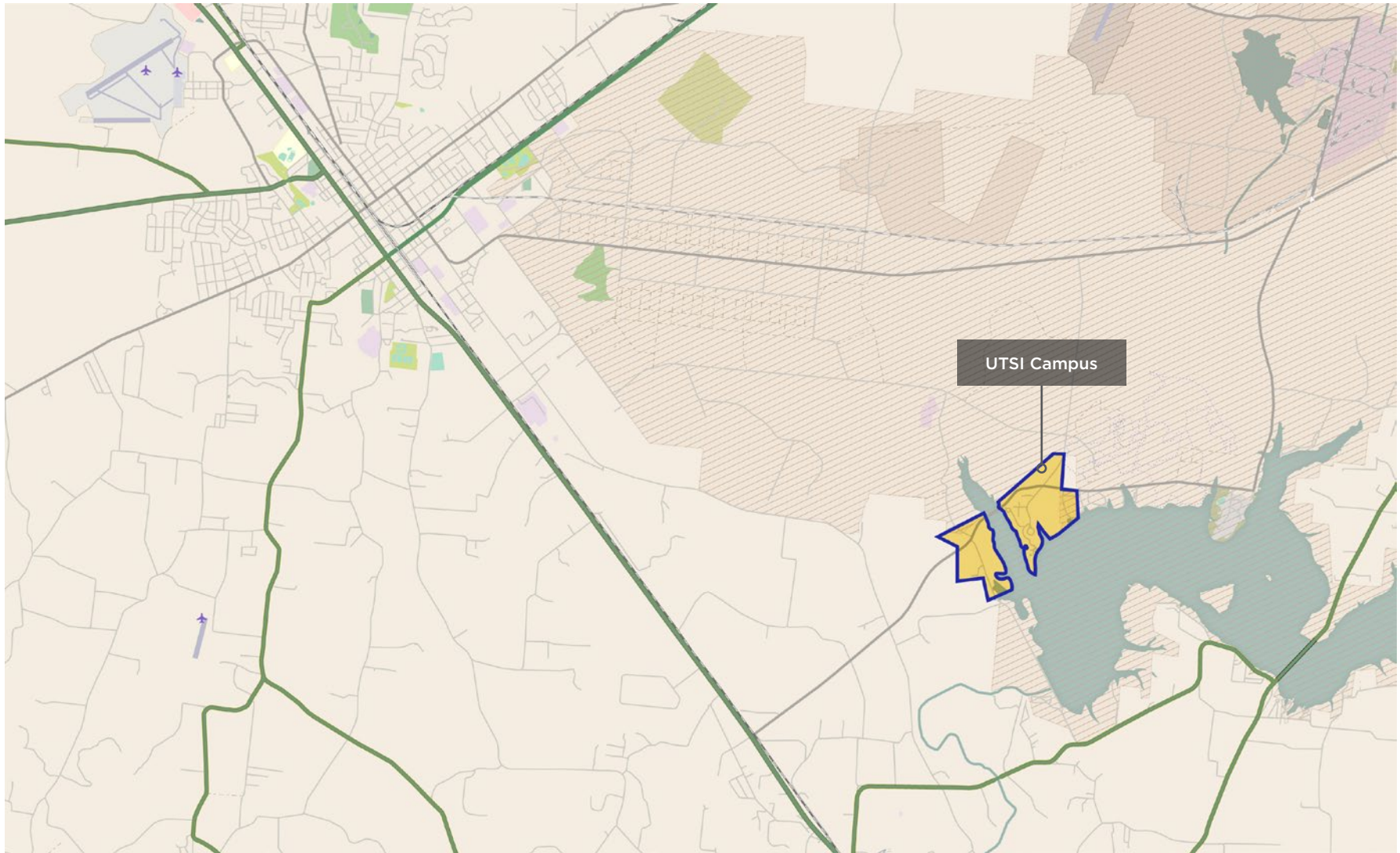
UT Knoxville

The master plan defines its Knoxville-based boundary by identifying a circular zone of influence with a radius of 1.5 miles centered on Andy Holt and UT Drives. This zone of influence captures the contiguous properties of the University, as well as the UT Research Park at Cherokee Farm and the adjacent UT Day Golf Practice Facility to the south and west, and the UT Conference Center to the east. This approach positions the University to consider the strategic acquisition of properties that support partnerships and collaborative initiatives aligned with its mission and strategic plan. While the Ft. Sanders neighborhood to the north and Maplehurst Park to the east of campus do fall within the proposed radius, the University does not intend to acquire historic houses in these districts.



CAMPUS BOUNDARY

— Proposed 2023 Institutional Zone



UTSI BOUNDARY

— Proposed 2023 Institutional Zone

UTSI

The UT Space Institute, located in Tullahoma, plays a strategic role in the University's research and graduate education mission. While geographically distinct from the institution's Knoxville- based campus, the Space Institute offers unique growth opportunities. As such, the property owned by the University in this location was identified as one of several campuses that support the University's mission and strategic vision.

Acknowledgements

EXECUTIVE COMMITTEE

Donde Plowman, Chancellor

Carrie Castille, Senior Vice Chancellor/Senior Vice President for the UT Institute of Agriculture

Chris Cimino, Senior Vice Chancellor for Finance and Administration

Deborah Crawford, Vice Chancellor for Research

John Zomchick, Senior Vice Chancellor and Provost

Matthew Scoggins, Chief of Staff

Tisha Benton, Vice Chancellor for Communications

ADVISORY COMMITTEE

David Bakewell, Project Manager, Division of Capital Projects, The University of Tennessee System

Michael Brady, Associate Vice Chancellor for Facilities Services

Brian Browning, Co-Chair Space Committee, Associate Vice Chancellor, Division of Finance & Administration

William Dunne, Associate Dean, Research & Facilities; Master Plan Co-Chair

Robert Hinde, Co-Chair Space Committee, Vice Provost for Academic Affairs

Tony Hopson, Director, Real Property and Space Administration, The University of Tennessee System

Steve Glafenhein, Director of Services-The University of Tennessee Institute of Agriculture

Katy Locke, Director, Rec Sports, Division of Student Life

Bethany Morris, Project Manager - Landscape Architect, Facilities Services

Andy Powers, Campus Architect, Director, Facilities Services; Master Plan Co-Chair

Hollie Anne Raynor, Associate Dean and Professor, College of Education, Health and Human Sciences

Jason Young, Dean, College of Architecture and Design

Kevin Zurcher, Associate Athletics Director of Facilities and Capital Projects

WORKING GROUP

David Bakewell, Project Manager, Division of Capital Projects, The University of Tennessee System

William Dunne, Associate Dean, Research & Facilities; Master Plan Co-Chair

Tony Hopson, Director, Real Property and Space Administration, The University of Tennessee System

Andy Powers, Campus Architect, Director, Facilities Services; Master Plan Co-Chair

Bethany Morris, Project Manager - Landscape Architect, Facilities Services; Master Plan Project Manager

CONSULTANTS

Ayers Saint Gross, Planning Architecture, Landscape Architecture, Space Needs Planning

CDM Smith, Transportation, Civil Engineering

MHM, Local Architect

Newcomb and Boyd, Mechanical, Electrical, Plumbing Engineering

Palacio Collaborative, Cost Estimating

Sanders Pace, South Waterfront

